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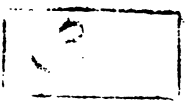

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CORRELATION OF STUDIES IN ELEMENTARY SCHOOLS.

BY W. T. HARRIS, LL. D.

The undersigned Committee agrees upon the following report, each member reserving for himself the expression of his individual divergence from the opinion of the majority, by a statement appended to his signature, enumerating the points to which exception is taken and the grounds for them.

1. CORRELATION OF STUDIES.

Your Committee understands by correlation of studies: —

1. Logical order of topics and branches.

First, the arrangement of topics in proper sequence in the course of study, in such a manner that each branch develops in an order suited to the natural and easy progress of the child, and so that each step is taken at the proper time to help his advance to the next step in the same branch, or to the next steps in other related branches of the course of study.

2. Symmetrical whole of studies in the world of human learning.

Second, the adjustment of the branches of study in such a manner that the whole course at any given time represents all the great divisions of human learning, as far as is possible at the stage of maturity at which the

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pupil has arrived, and that each allied group of studies is represented by some one of its branches best adapted for the epoch in question; it being implied that there is an equivalence of studies to a greater or less degree within each group, and that each branch of human learning should be represented by some equivalent study; so that, while no great division is left unrepresented, no group shall have superfluous representatives, and thereby debar other groups from a proper representation.

3. Psychological symmetry — the whole mind.

Third, the selection and arrangement of the branches and topics within each branch, considered psychologically, with a view to afford the best exercise of the faculties of the mind, and to secure the unfolding of those faculties in their natural order, so that no one faculty is so overcultivated or so neglected as to produce abnormal or one-sided mental development.

4. Correlation of pupil's course of study with the world in which he lives — his spiritual and natural environment.

Fourth and chiefly, your Committee understands by correlation of studies the selection and arrangement in orderly sequence of such objects of study as shall give the child an insight into the world that he lives in, and a command over its resources such as is obtained by a helpful co-operation with one's fellows. In a word, the chief consideration to which all others are to be subordinated, in the opinion of your Committee, is this requirement of the civilization into which the child is born, as determining not only what he shall study in school, but what habits and customs he shall be taught in the family before the school age arrives; as well as that he shall acquire a skilled ac-

quaintance with some one of a definite series of trades, professions, or vocations in the years that follow school; and, furthermore, that this question of the relation of the pupil to his civilization determines what political duties he shall assume and what religious faith and spiritual aspirations shall be adopted for the conduct of his life.

To make more clear their reasons for the preference here expressed for the objective and practical basis of selection of topics for the course of study rather than the subjective basis so long favored by educational writers, your Committee would describe the psychological basis, already mentioned, as being merely formal in its character, relating only to the exercise of the so-called mental faculties.

It would furnish a training of spiritual powers analogous to the gymnastic training of the muscles of the body. Gymnastics may develop strength and agility without leading to any skill in trades or useful employment. So an abstract psychological training may develop the will, the intellect, the imagination, or the memory, but without leading to an exercise of acquired power in the interests of civilization. The game of chess would furnish a good course of study for the discipline of the powers of attention and calculation of abstract combinations, but it would give its possessor little or no knowledge of man or nature. The psychological ideal which has prevailed to a large extent in education has, in the old phrenology, and in the recent studies in physiological psychology, sometimes given place to a biological ideal. Instead of the view of mind as made up of faculties like will, intellect, imagination, and emotion, conceived to be all necessary to the soul, if developed in harmony with one another, the concept of nerves or brain-tracts is used as the ultimate regulative principle to determine the selection

and arrangement of studies. Each part of the brain is supposed to have its claim on the attention of the educator, and that study is thought to be the most valuable which employs normally the larger number of brain-tracts. This view reaches an extreme in the direction of formal, as opposed to objective or practical grounds for selecting a course of study. While the old psychology with its mental faculties concentrated its attention on the mental processes and neglected the world of existing objects and relations upon which those processes were directed, physiological psychology tends to confine its attention to the physical part of the process, the organic changes in the brain cells and their functions.

Your Committee is of the opinion that psychology of both kinds, physiological and introspective, can hold only a subordinate place in the settlement of questions relating to the correlation of studies. The branches to be studied, and the extent to which they are studied, will be determined mainly by the demands of one's civilization. These will prescribe what is most useful to make the individual acquainted with physical nature and with human nature so as to fit him as an individual to perform his duties in the several institutions — family, civil society, the state, and the Church. But next after this, psychology will furnish important considerations that will largely determine the methods of instruction, the order of taking up the several topics so as to adapt the school work to the growth of the pupil's capacity, and the amount of work so as not to overtax his powers by too much, or arrest the development of strength by too little. A vast number of subordinate details belonging to the pathology of education, such as the hygienic features of school architecture and furniture, programmes, the length of study hours and of class exercises, recreation, and bodily

reactions against mental effort, will be finally settled by scientific experiment in the department of physiological psychology.

Inasmuch as your Committee is limited to the consideration of the correlation of studies in the elementary school, it has considered the question of the course of study in general only in so far as this has been found necessary in discussing the grounds for the selection of studies for the period of school education occupying the eight years from six to fourteen years, or the school period between the kindergarten on the one hand and the secondary school on the other. It has not been possible to avoid some inquiry into the true distinction between secondary and elementary studies, since one of the most important questions forced upon the attention of your Committee is that of the abridgment of the elementary course of study from eight or more years to seven or even six years, and the corresponding increase of the time devoted to studies usually assigned to the high school and supposed to belong to the secondary course of study for some intrinsic reason.

II. THE COURSE OF STUDY — EDUCATIONAL VALUES.

Your Committee would report that it has discussed in detail the several branches of study that have found a place in the curriculum of the elementary school, with a view to discover their educational value for developing and training the faculties of the mind, and more especially for correlating the pupil with his spiritual and natural environment in the world in which he lives.

A. Language studies.

There is first to be noted the prominent place of language study that takes the form of reading, penmanship, and grammar in the first eight years' work of the

school. It is claimed for the partiality shown to these studies that it is justified by the fact that language is the instrument that makes possible human social organization It enables each person to communicate his individual experience to his fellows and thus permits each to profit by the experience of all. The written and printed forms of speech preserve human knowledge and make progress in civilization possible. The conclusion is reached that learning to read and write should be the leading study of the pupil in his first four years of school. Reading and writing are not so much ends in themselves as means for the acquirement of all other human learning. This consideration alone would be sufficient to justify their actual place in the work of the elementary school. But these branches require of the learner a difficult process of analysis. The pupil must identify the separate words in the sentence he uses, and in the next place must recognize the separate sounds in each word. It requires a considerable effort for the child or the savage to analyze his sentence into its constituent words, and a still greater effort to discriminate its elementary sounds. Reading, writing, and spelling in their most elementary form, therefore, constitute a severe training in mental analysis for the child of six to ten years of age. We are told that it is far more disciplinary to the mind than any species of observation of differences among material things, because of the fact that the word has a twofold character — addressed to external sense as spoken sound to the ear, or as written and printed words to the eye — but containing a meaning or sense addressed to the understanding and only to be seized by introspection. The pupil must call up the corresponding idea by thought, memory, and imagination, or else the word will cease to be a word *and remain* only a sound or character.

On the other hand, observation of things and movements does not necessarily involve this twofold act of analysis, introspective and objective, but only the latter — the objective analysis. It is granted that we all have frequent occasion to condemn poor methods of instruction as teaching words rather than things. But we admit that we mean empty sounds or charac ters rather than true words. Our suggestions for the correct method of teaching amount in this case simply to laying stress on the meaning of the word, and to setting the teaching process on the road of analysis of content rather than form. In the case of words used to store up external observation the teacher is told to repeat and make alive again the act of observation by which the word obtained its original meaning. In the case of a word expressing a relation between facts or events, the pupil is to be taken step by step through the process of reflection by which the idea was built up. Since the word, spoken and written, is the sole instrument by which reason can fix, preserve, and communicate both the data of sense and the relations discovered between them by reflection, no new method in education has been able to supplant in the school the branches, reading and penmanship. But the real improvements in method have led teachers to lay greater and greater stress on the internal factor of the word, on its meaning, and have in manifold ways shown how to repeat the original experiences that gave the meaning to concrete words, and the original comparisons and logical deductions by which the ideas of relations and causal processes arose in the mind and required abstract words to preserve and communicate them.

It has been claimed that it would be better to have first a basis of knowledge of things, and secondarily and subsequently a knowledge of words. But it has been

replied to this, that the progress of the child in learning to talk indicates his ascent out of mere impressions into the possession of true knowledge. For he names objects only after he has made some synthesis of his impressions and has formed general ideas. He recognizes the same object under different circumstances of time and place, and also recognizes other objects belonging to the same class by and with names. Hence the use of the word indicates a higher degree of self-activity — the stage of mere impressions without words or signs being a comparatively passive state of mind. What we mean by things first and words afterward, is, therefore, not the apprehension of objects by passive impressions so much as the active investigation and experimenting which come after words are used, and the higher forms of analysis are called into being by that invention of reason known as language, which, as before said, is a synthesis of thing and thought, of outward sign and inward signification.

Rational investigation cannot precede the invention of language any more than blacksmithing can precede the invention of hammers, anvils, and pincers. For language is the necessary tool of thought used in the conduct of the analysis and synthesis of investigation.

Your Committee would sum up these considerations by saying that language rightfully forms the centre of instruction in the elementary school, but that progress in methods of teaching is to be made, as hitherto, chiefly by laying more stress on the internal side of the word, its meaning; using better graded steps to build up the chain of experience or the train of thought that the word expresses.

The first three years' work of the child is occupied mainly with the mastery of the printed and written forms of the words of his colloquial vocabulary; words that he is already familiar enough with as sounds ad-

dressed to the ear. He has to become familiar with the new forms addressed to the eye, and it would be an unwise method to require him to learn many new words at the same time that he is learning to recognize his old words in their new shape. But as soon as he has acquired some facility in reading what is printed in the colloquial style, he may go on to selections from standard authors. The literary selections should be graded, and are graded in almost all series of readers used in our elementary schools, in such a way as to bring those containing the fewest words outside of the colloquial vocabulary into the lower books of the series, and increasing the difficulties, step by step, as the pupil grows in maturity. The selections are literary works of art possessing the required organic unity and a proper reflection of this unity in the details, as good works of art must do. But they portray situations of the soul, or scenes of life, or elaborated reflections, of which the child can obtain some grasp through his capacity to feel and think, although in scope and compass they far surpass his range. They are adapted, therefore, to lead him out of and beyond himself, as spiritual guides.

Literary style employs, besides words common to the colloquial vocabulary, words used in a semi-technical sense expressive of fine shades of thought and emotion. The literary work of art furnishes a happy expression for some situation of the soul, or some train of reflection hitherto unutterable in an adequate manner. If the pupil learns this literary production, he finds himself powerfully helped to understand both himself and his fellow-men. The most practical knowledge of all, it will be admitted, is a knowledge of human nature — a knowledge that enables one to combine with his fellow-men, and to share with them the physical and spiritual wealth of the race. Of this high character as

humanizing or civilizing, are the favorite works of literature found in the school readers, about one hundred and fifty English and American writers being drawn upon for the material. Such are Shakespeare's speeches of Brutus and Mark Antony, Hamlet's and Macbeth's soliloquies, Milton's L'Allegro and Il Penseroso, Gray's Elegy, Tennyson's Charge of the Light Brigade and Ode on the Death of the Duke of Wellington, Byron's Waterloo, Irving's Rip Van Winkle, Webster's Reply to Hayne, The Trial of Knapp, and Bunker Hill oration, Scott's Lochinvar, Marmion, and Roderick Dhu, Bryant's Thanatopsis, Longfellow's Psalm of Life, Paul Revere, and the Bridge, O'Hara's Bivouac of the Dead, Campbell's Hohenlinden, Collins' How Sleep the Brave, Wolfe's Burial of Sir John Moore, and other fine prose and poetry from Addison, Emerson, Franklin, The Bible, Hawthorne, Walter Scott, Goldsmith, Wordsworth, Swift, Milton, Cooper, Whittier, Lowell, and the rest. The reading and study of fine selections in prose and verse furnish the chief æsthetic training of the elementary school. But this should be re-enforced by some study of photographic or other reproductions of the world's great masterpieces of architecture, sculpture, and painting. The frequent sight of these reproductions is good; the attempt to copy or sketch them with the pencil is better; best of all is an æsthetic lesson on their composition, attempting to describe in words the idea of the whole that gives the work its organic unity, and the devices adopted by the artist to reflect this idea in the details and re-enforce its strength. The æsthetic taste of teacher and pupil can be cultivated by such exercises, and once set on the road of development, this taste may improve through life.

A third phase of language study in the elementary school is formal grammar. The works of literary art

in the readers, re-enforced as they ought to be by supplementary reading at home of the whole works from which the selections for the school readers are made, will educate the child in the use of a higher and better English style. Technical grammar never can do this. Only familiarity with fine English works will insure one a good and correct style. But grammar is the science of language, and as the first of the seven liberal arts it has long held sway in school as the disciplinary study *par excellence.* A survey of its educational value, subjective and objective, usually produces the conviction that it is to retain the first place in the future. Its chief objective advantage is, that it shows the structure of language, and the logical forms of subject, predicate, and modifier, thus revealing the essential nature of thought itself, the most important of all objects, because it is self-object. On the subjective or psychological side, grammar demonstrates its title to the first place by its use as a discipline in subtle analysis, in logical division and classification, in the art of questioning, and in the mental accomplishment of making exact definitions. Nor is this an empty, formal discipline, for its subject-matter, language, is a product of the reason of a people, not as individuals, but as a social whole, and the vocabulary holds in its store of words the generalized experience of that people, including sensuous observation and reflection, feeling and emotion, instinct and volition.

No formal labor on a great objective field is ever lost wholly, since at the very least it has the merit of familiarizing the pupil with the contents of some one extensive province that borders on his life, and with which he must come into correlation; but it is easy for any special formal discipline, when continued too long, to paralyze or arrest growth at that stage. The overcultivation of the verbal memory tends to arrest

the growth of critical attention and reflection. Memory of accessory details too, so much prized in the school, is also cultivated often at the expense of an insight into the organizing principle of the whole and the casual nexus that binds the parts. So, too, the study of quantity, if carried to excess, may warp the mind into a habit of neglecting quality in its observation and reflection. As there is no subsumption in the quantitative judgment, but only dead equality or inequality (A is equal to or greater or less than B), there is a tendency to atrophy in the faculty of concrete syllogistic reasoning on the part of the person devoted exclusively to mathematics. For the normal syllogism uses judgments wherein the subject is subsumed under the predicate (This is a rose — the individual rose is subsumed under the class rose; Socrates is a man, etc.). Such reasoning concerns individuals in two aspects, first as concrete wholes and secondly as members of higher totalities or classes — species and genera. Thus, too, grammar, rich as it is in its contents, is only a formal discipline as respects the scientific, historic, or literary contents of language, and is indifferent to them. A training for four or five years in parsing and grammatical analysis practiced on literary works of art (Milton, Shakespeare, Tennyson, Scott) is a training of the pupil into habits of indifference toward and neglect of the genius displayed in the literary work of art, and into habits of impertinent and trifling attention to elements employed as material or texture, and a corresponding neglect of the structural form, which alone is the work of the artist. A parallel to this would be the mason's habit of noticing only the brick and mortar, or the stone and cement, in his inspection of the architecture, say of Sir Christopher Wren. A child overtrained to analyze and classify shades of color — examples of this one finds occa-

sionally in a primary school whose specialty is "objective teaching" — might in later life visit an art gallery and make an inventory of colors without getting even a glimpse of a painting as a work of art. Such overstudy and misuse of grammar as one finds in the elementary school, it is feared, exists to some extent in secondary schools and even in colleges, in the work of mastering the classic authors.

Your Committee is unanimous in the conviction that formal grammar should not be allowed to usurp the place of a study of the literary work of art in accordance with literary method. The child can be gradually trained to see the technical "motives" of a poem or prose work of art and to enjoy the æsthetic inventions of the artist. The analysis of a work of art should discover the idea that gives it organic unity; the collision and the complication resulting; the solution and *dénouement.* Of course these things must be reached in the elementary school without even a mention of their technical terms. The subject of the piece is brought out; its reflection in the conditions of the time and place to heighten interest by showing its importance; its second and stronger reflection in the several details of its conflict and struggle; its reflection in the *dénouement* wherein its struggle ends in victory or defeat and the ethical or rational interests are vindicated,— and the results move outward, returning to the environment again in ever-widening circles, — something resembling this is to be found in every work of art, and there are salient features which can be briefly but profitably made subject of comment in familiar language with even the youngest pupils. There is an ethical and an æsthetical content to each work of art. It is profitable to point out both of these in the interest of the child's growing insight into human nature. The ethical should, however, be kept in sub-

ordination to the æsthetical, but for the sake of the supreme interests of the ethical itself. Otherwise the study of a work of art degenerates into a goody goody performance, and its effects on the child are to cause a reaction against the moral. The child protects his inner individuality against effacement through external authority by taking an attitude of rebellion against stories with an appended moral. Herein the superiority of the æsthetical in literary art is to be seen. For the ethical motive is concealed by the poet, and the hero is painted with all his brittle individualism and self-seeking. His passions and his selfishness, gilded by fine traits of bravery and noble manners, interest the youth, interest us all. The established social and moral order seems to the ambitious hero to be an obstacle to the unfolding of the charms of individuality. The deed of violence gets done, and the Nemesis is aroused. Now his deed comes back on the individual doer, and our sympathy turns against him and we rejoice in his fall. Thus the æsthetical unity contains within it the ethical unity. The lesson of the great poet or novelist is taken to heart, whereas the ethical announcement by itself might have failed, especially with the most self-active and aspiring of the pupils. Aristotle pointed out in his Poetics this advantage of the æsthetic unity, which Plato in his Republic seems to have missed. Tragedy purges us of our passions, to use Aristotle's expression, because we identify our own wrong inclinations with those of the hero, and by sympathy we suffer with him and see our intended deed returned upon us with tragic effect, and are thereby cured.

Your Committee has dwelt upon the æsthetic side of literature in this explicit manner because they believe that the general tendency in elementary schools is to neglect the literary art for the literary formalities

which concern the mechanical material rather than the spiritual form. Those formal studies should not be discontinued, but subordinated to the higher study of literature.

Your Committee reserves the subject of language lessons, composition writing, and what relates to the child's expression of ideas in writing, for consideration under Part 3 of this Report, treating of programme.

B. Arithmetic.

Side by side with language study is the study of mathematics in the schools, claiming the second place in importance of all studies. It has been pointed out that mathematics concerns the laws of time and space — their structural form, so to speak — and hence that it formulates the logical conditions of all matter both in rest and in motion. Be this as it may, the high position of mathematics as the science of all quantity is universally acknowledged. The elementary branch of mathematics is arithmetic, and this is studied in the primary and grammar schools from six to eight years, or even longer. The relation of arithmetic to the whole field of mathematics has been stated (by Comte, Howison, and others) to be that of the final step in a process of calculation, in which results are stated numerically. There are branches that develop or derive quantitative functions: say geometry for spatial forms, and mechanics for movement and rest and the forces producing them. Other branches transform these quantitative functions into such forms as may be calculated in actual numbers; namely, algebra in its common or lower form, and in its higher form as the differential and integral calculus, and the calculus of variations. Arithmetic evaluates or finds the numerical value for the functions thus deduced and transformed. The educational value of arithmetic is

thus indicated both as concerns its psychological side and its objective practical uses in correlating man with the world of nature. In this latter respect as furnishing the key to the outer world in so far as the objects of the latter are a matter of direct enumeration,— capable of being counted,— it is the first great step in the conquest of nature. It is the first tool of thought that man invents in the work of emancipating himself from thraldom to external forces. For by the command of number he learns to divide and conquer. He can proportion one force to another, and concentrate against an obstacle precisely what is needed to overcome it. Number also makes possible all the other sciences of nature which depend on exact measurement and exact record of phenomena as to the following items: order of succession, date, duration, locality, environment, extent of sphere of influence, number of manifestations, number of cases of intermittence. All these can be defined accurately only by means of number. The educational value of a branch of study that furnishes the indispensable first step toward all science of nature is obvious. But psychologically its importance further appears in this, that it begins with an important step in analysis; namely, the detachment of the idea of quantity from the concrete whole, which includes quality as well as quantity. To count, one drops the qualitative and considers only the quantitative aspect. So long as the individual differences (which are qualitative in so far as they distinguish one object from another) are considered, the objects cannot be counted together. When counted, the distinctions are dropped out of sight as indifferent. As counting is the fundamental operation of arithmetic, and all other arithmetical operations are simply devices for speed by using remembered countings instead of going through the detailed work again each time, the hint is furnished

the teacher for the first lessons in arithmetic. This hint has been generally followed out and the child set at work at first upon the counting of objects so much alike that the qualitative difference is not suggested to him. He constructs gradually his tables of addition, subtraction, and multiplication, and fixes them in his memory. Then he takes his next higher step; namely, the apprehension of the fraction. This is an expressed ratio of two numbers, and therefore a much more complex thought than he has met with in dealing with the simple numbers. In thinking five-sixths, he first thinks five and then six, and holding these two in mind thinks the result of the first modified by the second. Here are three steps instead of one, and the result is not a simple number, but an inference resting on an unperformed operation. This psychological analysis shows the reason for the embarrassment of the child on his entrance upon the study of fractions and the other operations that imply ratio. The teacher finds all his resources in the way of method drawn upon to invent steps and half steps, to aid the pupil to make continuous progress here. All these devices of method consist in steps by which the pupil descends to the simple number and returns to the complex. He turns one of the terms into a qualitative unit, and thus is enabled to use the other as a simple number. The pupil takes the denominator, for example, and makes clear his conception of one-sixth as his qualitative unit, then five-sixths is as clear to him as five oxen. But he has to repeat this return from ratio to simple numbers in each of the elementary operations — addition, subtraction, multiplication, and division, and in the reduction of fractions — and finds the road long and tedious at best. In the case of decimal fractions the psychological process is more complex still; for the pupil has given him one of the terms, the numerator, from which

he must mentally deduce the denominator from the position of the decimal point. This doubles the work of reading and recognizing the fractional number. But it makes addition and subtraction of fractions nearly as easy as that of simple numbers and assists also in multiplication of fractions. But division of decimals is a much more complex operation than that of common fractions.

The want of a psychological analysis of these processes has led many good teachers to attempt decimal fractions with their pupils before taking up common fractions. In the end they have been forced to make introductory steps to aid the pupil, and in these steps to introduce the theory of the common fraction. They have by this refuted their own theory.

Besides (*a*) simple numbers and the four operations with them, (*b*) fractions common and decimal, there is (*c*) a third step in number; namely, the theory of powers and roots. It is a further step in ratio; namely, the relation of a simple number to itself as power and root. The mass of material which fills the arithmetic used in the elementary school consists of two kinds of examples: first, those wherein there is a direct application of simple numbers, fractions, and powers; and secondly, the class of examples involving operations in reaching numerical solutions through indirect data and consequently involving more or less transformation of functions. Of this character is most of the so-called higher arithmetic and such problems in the text-book used in the elementary schools as have, not inappropriately, been called (by General Francis A. Walker in his criticism on common-school arithmetic) numerical "conundrums." Their difficulty is not found in the strictly arithmetical part of the process of the solution (the third phase above described), but rather in the transformation of the quan-

titative function given into the function that can readily be calculated numerically. The transformation of functions belongs strictly to algebra. Teachers who love arithmetic, and who have themselves success in working out the so-called numerical conundrums, defend with much earnestness the current practice which uses so much time for arithmetic. They see in it a valuable training for ingenuity and logical analysis, and believe that the industry which discovers arithmetical ways of transforming the functions given in such problems into plain numerical operations of adding, subtracting, multiplying, or dividing is well bestowed. On the other hand, the critics of this practice contend that there should be no merely formal drill in school for its own sake, and that there should be, always, a substantial content to be gained. They contend that the work of the pupil in transforming quantitative functions by arithmetical methods is wasted, because the pupil needs a more adequate expression than number for this purpose; that this has been discovered in algebra, which enables him to perform with ease such quantitative transformations as puzzle the pupil in arithmetic. They hold, therefore, that arithmetic pure and simple should be abridged and elementary algebra introduced after the numerical operations in powers, fractions, and simple numbers have been mastered, together with their applications to the tables of weights and measures and to percentage and interest. In the seventh year of the elementary course there would be taught equations of the first degree and the solution of arithmetical problems that fall under proportion, or the so-called "rule of three," together with other problems containing complicated conditions — those in partnership, for example. In the eighth year quadratic equations could be learned, and other problems of higher arithmetic solved in a more satisfactory

manner than by numerical methods. It is contended that this earlier introduction of algebra, with a sparing use of letters for known quantities, would secure far more mathematical progress than is obtained at present on the part of all pupils, and that it would enable many pupils to go on into secondary and higher education who are now kept back on the plea of lack of preparation in arithmetic, the real difficulty in many cases being a lack of ability to solve algebraic problems by an inferior method.

Your Committee would report that the practice of teaching two lessons daily in arithmetic, one styled "mental," or "intellectual," and the other "written" arithmetic (because its exercises are written out with pencil or pen), is still continued in many schools. By this device the pupil is made to give twice as much time to arithmetic as to any other branch. It is contended by the opponents of this practice, with some show of reason, that two lessons a day in the study of quantity have a tendency to give the mind a bent or set in the direction of thinking quantitatively, with a corresponding neglect of the power to observe, and to reflect upon, qualitative and causal aspects. For mathematics does not take account of causes, but only of equality and difference in magnitude. It is further objected that the attempt to secure what is called thoroughness in the branches taught in the elementary schools is often carried too far; in fact, to such an extent as to produce arrested development (a sort of mental paralysis) in the mechanical and formal stages of growth. The mind, in that case, loses its appetite for higher methods and wider generalizations. The law of apperception, we are told, proves that temporary methods of solving problems should not be so thoroughly mastered as to be used involuntarily, or as a matter of unconscious habit, for the reason that a

higher and more adequate method of solution will then be found more difficult to acquire. The more thoroughly a method is learned, the more it becomes part of the mind, and the greater the repugnance of the mind toward a new method. For this reason, parents and teachers discourage young children from the practice of counting on the fingers, believing that it will cause much trouble later to root out this vicious habit and replace it by purely mental processes. Teachers should be careful, especially with precocious children, not to continue too long in the use of a process that is becoming mechanical; for it is already growing into a second nature, and becoming a part of the unconscious apperceptive process by which the mind reacts against the environment, recognizes its presence, and explains it to itself. The child that has been overtrained in arithmetic reacts apperceptively against his environment chiefly by noticing its numerical relations — he counts and adds; his other apperceptive reactions being feeble, he neglects qualities and causal relations. Another child who has been drilled in recognizing colors apperceives the shades of color to the neglect of all else. A third child, excessively trained in form studies by the constant use of geometric solids, and much practice in looking for the fundamental geometric forms lying at the basis of the multifarious objects that exist in the world, will, as a matter of course, apperceive geometric forms, ignoring the other phases of objects.

It is, certainly, an advance on immediate sense-perception to be able to separate or analyze the concrete, whole impression, and consider the quantity apart by itself. But if arrested mental growth takes place here, the result is deplorable. That such arrest may be caused by too exclusive training in recognizing numerical relations is beyond a doubt.

Your Committee believes that, with the right methods, and a wise use of time in preparing the arithmetic lesson in and out of school, five years are sufficient for the study of mere arithmetic — the five years beginning with the second school year and ending with the close of the sixth year; and that the seventh and eighth years should be given to the algebraic method of dealing with those problems that involve difficulties in the transformation of quantitative indirect functions into numerical or direct quantitative data.

Your Committee, however, does not wish to be understood as recommending the transfer of algebra, as it is understood and taught in most secondary schools, to the seventh year, or even to the eighth year of the elementary school. The algebra course in the secondary school, as taught to the pupils in their fifteenth year of age, very properly begins with severe exercises, with a view to discipline the pupil in analyzing complex literate expressions at sight, and to make him able to recognize at once the factors that are contained in such combinations of quantities. The proposed seventh-grade algebra must use letters for the unknown quantities and retain the numerical form of the known quantities, using letters for these very rarely, except to exhibit the general form of solution, or what, if stated in words, becomes a so-called "rule" in arithmetic. This species of algebra has the character of an introduction or transitional step to algebra proper. The latter should be taught thoroughly in the secondary school. Formerly it was a common practice to teach elementary algebra of this sort in the preparatory schools, and reserve for the college a study of algebra proper. But in this case there was often a neglect of sufficient practice in factoring literate quantities, and, as a consequence, the pupil suffered embarrassment in his more advanced mathematics; for ex-

ample, in analytical geometry, the differential calculus, and mechanics. The proposition of your Committee is intended to remedy the two evils already named: first, to aid the pupils in the elementary school to solve, by a higher method, the more difficult problems that now find place in advanced arithmetic; and secondly, to prepare the pupil for a thorough course in pure algebra in the secondary school.

Your Committee is of the opinion that the so-called mental arithmetic should be made to alternate with written arithmetic for two years, and that there should not be two daily lessons in this subject.

C. Geography.

The leading branch of the seven liberal arts was grammar, being the first of the *Trivium* (grammar, rhetoric, and logic). Arithmetic, however, led the second division, the *Quadrivium* (arithmetic, geometry, music, and astronomy). We have glanced at the reasons for the place of grammar as leading the humane studies, as well as for the place of arithmetic as leading the nature studies. Following arithmetic, as the second study in importance among the branches that correlate man to nature, is geography. It is interesting to note that the old quadrivium of the Middle Ages included geography, under the title of geometry, as the branch following arithmetic in the enumeration; the subject-matter of their so-called "geometry" being chiefly an abridgment of Pliny's geography, to which were added a few definitions of geometric forms, something like the primary course in geometric solids in our elementary schools. So long as there has been elementary education there has been something of geography included. The Greek education laid stress on teaching the second book of Homer, containing the Catalogue of the Ships and a brief mention of the

geography and history of all the Greek tribes that took part in the Trojan War. History remains unseparated from geography and geometry in the Middle Ages. Geography has preserved this comprehensiveness of meaning as a branch of the study in the elementary schools down to the present day. After arithmetic, which treats of the abstract or general conditions of material existence, comes geography, with a practical study of man's material *habitat*, and its relations to him. It is not a simple science by itself, like botany, or geology, or astronomy, but a collection of sciences levied upon to describe the earth as the dwelling-place of man and to explain something of its more prominent features. About one-fourth of the material relates strictly to the geography, about one-half to the inhabitants, their manners, customs, institutions, industries, productions, and the remaining one-fourth to items drawn from the sciences of mineralogy, meteorology, botany, zoölogy, and astronomy. This predominance of the human feature in a study ostensibly relating to physical nature, your Committee considers necessary and entirely justifiable. The child commences with what is nearest to his interests, and proceeds gradually toward what is remote and to be studied for its own sake. It is, therefore, a mistake to suppose that the first phase of geography presented to the child should be the process of continent formation. He must begin with the natural difference of climate, and lands, and waters, and obstacles that separate peoples, and study the methods by which man strives to equalize or overcome these differences by industry and commerce, to unite all places and all people, and make it possible for each to share in the productions of all. The industrial and commercial idea is, therefore, the first central idea in the study of geography in the elementary schools. It leads directly to the nat-

ural elements of difference in climate, soil, and productions, and also to those in race, religion, political status, and occupations of the inhabitants, with a view to explain the grounds and reasons for this counter-process of civilization which struggles to overcome the differences. Next comes the deeper inquiry into the process of continent formation, the physical struggle between the process of upheaving or upbuilding of continents and that of their obliteration by air and water; the explanation of the mountains, valleys, and plains, the islands, volcanic action, the winds, the rain-distribution. But the study of cities, their location, the purposes they serve as collecting, manufacturing, and distributing centres, leads most directly to the immediate purpose of geography in the elementary school. From this beginning, and holding to it as a permanent interest, the inquiry into causes and conditions proceeds concentrically to the sources of the raw materials, the methods of their production, and the climatic, geologic, and other reasons that explain their location and their growth.

In recent years, especially through the scientific study of physical geography, the processes that go to the formation of climate, soil, and general configuration of land masses have been accurately determined, and the methods of teaching so simplified that it is possible to lead out from the central idea mentioned to the physical explanations of the elements of geographical difference quite early in the course of study. Setting out from the idea of the use made of the earth by civilization, the pupil in the fifth and sixth years of his schooling (at the age of eleven or twelve) may extend his inquiries quite profitably as far as the physical explanations of land-shapes and climates. In the seventh and eighth year of school much more may be done in this direction. But it is believed that the dis-

tinctively human interest connected with geography in the first years of its study should not yield to the purely scientific one of physical processes until the pupil has taken up the study of history.

The educational value of geography, as it is and has been in elementary schools, is obviously very great. It makes possible something like accuracy in the picturing of distant places and events, and removes a large tract of mere superstition from the mind. In the days of newspaper reading one's stock of geographical information is in constant requisition. A war on the opposite side of the globe is followed with more interest in this year than a war near our own borders before the era of the telegraph. The general knowledge of the locations and boundaries of nations, of their status in civilization, and their natural advantages for contributing to the world market, is of great use to the citizen in forming correct ideas from his daily reading.

The educational value of geography is even more apparent if we admit the claims of those who argue that the present epoch is the beginning of an era in which public opinion is organized into a ruling force by the agency of periodicals and books. Certainly neither the newspaper nor the book can influence an illiterate people; they can do little to form opinions where the readers have no knowledge of geography.

As to the psychological value of geography little need be said. It exercises in manifold ways the memory of forms and the imagination; it brings into exercise the thinking power, in tracing back toward unity the various series of causes. What educative value there is in geology, meteorology, zoölogy, ethnology, economics, history, and politics is to be found in the more profound study of geography, and, to a proportionate extent, in the study of its merest elements.

Your Committee is of the opinion that there has

been a vast improvement in the methods of instruction in this branch in recent years, due, in large measure, to the geographical societies of this and other countries. At first there prevailed what might be named sailor geography. The pupil was compelled to memorize all the capes and headlands, bays and harbors, mouths of rivers, islands, sounds, and straits around the world. He enlivened this, to some extent, by brief mention of the curiosities and oddities in the way of cataracts, water-gaps, caves, strange animals, public buildings, picturesque costumes, national exaggerations, and such matters as would furnish good themes for sailors' yarns. Little or nothing was taught to give unity to the isolated details furnished in endless number. It was an improvement on this when the method of memorizing capital cities and political boundaries succeeded. With this came the era of map drawing. The study of watersheds and commercial routes, of industrial productions and centres of manufacture and commerce, has been adopted in the better class of schools. Instruction in geography is growing better by the constant introduction of new devices to make plain and intelligible the determining influence of physical causes in producing the elements of difference and the counter-process of industry and commerce by which each difference is rendered of use to the whole world, and each locality made a participator in the productions of all.

D. History.

The next study, ranked in order of value, for the elementary school is history. But, as will be seen, the value of history, both practically and psychologically, is less in the beginning and greater at the end than geography. For it relates to the institutions of men, and especially to the political state and its evolu-

tion. While biography narrates the career of the individual, civil history records the careers of nations. The nation has been compared to the individual by persons interested in the educational value of history. Man has two selves, they say, the individual self, and the collective self of the organized state or nation. The study of history is, then, the study of this larger, corporate, social and civil self. The importance of this idea is thus brought out more clearly in its educational significance. For to learn this civil self is to learn the substantial condition which makes possible the existence of civilized man in all his other social combinations — the family, the Church, and the manifold associated activities of civil society. For the state protects these combinations from destruction by violence. It defines the limits of individual and associated effort, within which each endeavor reenforces the endeavors of all, and it uses the strength of the whole nation to prevent such actions as pass beyond these safe limits and tend to collision with the normal action of the other individuals and social units. Hobbes called the state a Leviathan, to emphasize its stupendous individuality and organized self-activity. Without this, he said, man lives in a state of "constant war, fear, poverty, filth, ignorance, and wretchedness; within the state dwell peace, security, riches, science, and happiness." The state is the collective man who "makes possible the rational development of the individual man, like a mortal God, subduing his caprice and passion and compelling obedience to law, developing the ideas of justice, virtue, and religion, creating property and ownership, nurture and education." The education of the child into a knowledge of this higher self begins early within the nurture of the family. The child sees a policeman or some town officer, some public building, a court house or a jail; he sees or

hears of an act of violence, a case of robbery or murder followed by arrest of the guilty. The omnipresent higher self, which has been invisible hitherto, now becomes visible to him in its symbols and still more in its acts.

History in school, it is contended, should be the special branch for education in the duties of citizenship. There is ground for this claim. History gives a sense of belonging to a higher social unity which possesses the right of absolute control over person and property in the interest of the safety of the whole. This, of course, is the basis of citizenship; the individual must feel this or see this solidarity of the state and recognize its supreme authority. But history shows the collisions of nations, and the victory of one political ideal accompanied by the defeat of another. History reveals an evolution of forms of government that are better and better adapted to permit individual freedom, and the participation of all citizens in the administration of the government itself.

People who make their own government have a special interest in the spectacle of political evolution as exhibited in history. But it must be admitted that this evolution has not been well presented by popular historians. Take, for instance, the familiar example of old-time pedagogy, wherein the Roman republic was conceived as a freer government than the Roman empire that followed it, by persons apparently misled by the ideas of representative self-government associated with the word *republic*. It was the beginning of a new epoch when this illusion was dispelled, and the college student became aware of the true Roman meaning of *republic*, namely, the supremacy of an oligarchy on the Tiber that ruled distant provinces in Spain, Gaul, Asia Minor, Germany, and Africa, for its selfish ends and with an ever-increasing arrogance. The

people at home in Rome, not having a share in the campaigns on the borderland, did not appreciate the qualities of the great leaders who, like Cæsar, subdued the nations by forbearance, magnanimity, trust, and the recognition of a sphere of freedom secured to the conquered by the Roman civil laws, which were rigidly enforced by the conqueror, as much as by the violence of arms. The change from republic to empire meant the final subordination of this tyrannical Roman oligarchy, and the recognition of the rights of the provinces to Roman freedom. This illustration shows how easily a poor teaching of history may pervert its good influence or purpose into a bad one. For the Roman monarchy under the empire secured a degree of freedom never before attained under the republic, in spite of the election of such tyrants as Nero and Caligula to the imperial purple. The civil service went on as usual administering the affairs of distant countries, educating them in Roman jurisprudence, and cultivating a love for accumulating private property. Those countries had before lived communistically after the style of the tribe or at best of the village community. Roman private property in land gave an impulse to the development of free individuality such as had always been impossible under the social stage of development known as the village community.

To teach history properly is to dispel this shallow illusion which flatters individualism, and to open the eyes of the pupil to the true nature of freedom, namely, the freedom through obedience to just laws enforced by a strong government.

Your Committee has made this apparent digression for the sake of a more explicit statement of its conviction of the importance of teaching history in a different spirit from that of abstract freedom, which sometimes means anarchy, although they admit the

possibility of an opposite extreme, the danger of too little stress on the progressive element in the growth of nations, and its manifestation in new and better political devices for representing all citizens without weakening the central power.

That the history of one's own nation is to be taught in the elementary school seems fixed by common consent. United States history includes first a sketch of the epoch of discoveries and next of the epoch of colonization. This, fortunately, suits the pedagogic requirements. For the child loves to approach the stern realities of a firmly established civilization through its stages of growth by means of individual enterprise. Here is the use of biography as introduction to history. It treats of exceptional individuals whose lives bring them in one way or another into national or even world-historical relations. They throw light on the nature and necessity of governments, and are in turn illuminated by the light thrown back on them by the institutions which they promote or hinder. The era of semi-private adventure with which American history begins is admirably adapted for study by the pupil in the elementary stage of his education. So, too, the next epoch, that of colonization. The pioneer is a degree nearer to civilization than is the explorer and discoverer. In the colonial history the pupil interests himself in the enterprise of aspiring individualities, in their conquest over obstacles of climate and soil; their conflicts with the aboriginal population; their choice of land for settlement; the growth of their cities; above all, their several attempts and final success in forming a constitution securing local self-government. An epoch of growing interrelation of the colonies succeeds, a tendency to union on a large scale due to the effect of European wars which involved England, France, and

other countries, and affected the relations of their colonies in America. This epoch, too, abounds in heroic personalities, like Wolfe, Montcalm, and Washington, and perilous adventures, especially in the Indian warfare

The fourth epoch is the Revolution, by which the colonies through joint effort secured their independence and afterward their union as a nation. The subject grows rapidly more complex, and tasks severely the powers of the pupils in the eighth year of the elementary school. The formation of the Constitution, and a brief study of the salient features of the Constitution itself, conclude the study of the portion of the history of the United States that is sufficiently remote to be treated after the manner of an educational classic. Everything up to this point stands out in strong individual outlines, and is admirably fitted for that elementary course of study. Beyond this point, the War of 1812 and the War of the Rebellion, together with the political events that led to it, are matters of memory with the present generation of parents and grandparents, and are, consequently, not so well fitted for intensive study in school as the already classic period of our history. But these later and latest epochs may be, and will be, read at home not only in the text-book on history used in the schools, but also in the numerous sketches that appear in newspapers, magazines, and in more pretentious shapes. In the intensive study which should be undertaken of the classic period of our history, the pupil may be taught the method appropriate to historical investigation, the many points of view from which each event ought to be considered. He should learn to discriminate between the theatrical show of events and the solid influences that move underneath as ethical causes. Although he is too immature for very far-

reaching reflections, he must be helped to see the causal processes of history. Armed with this discipline in historic methods, the pupil wi l do all of his miscellaneous reading and thinking in this province with more adequate intellectual reaction than was possible before the intensive study carried on in school.

The study of the outlines of the Constitution, for ten or fifteen weeks in the final year of the elementary school, has been found of great educational value. Properly taught, it fixes the idea of the essential threefoldness of the constitution of a free government and the necessary independence of each constituent power, whether legislative, judicial, or executive. This and some idea of the manner and mode of filling the official places in these three departments, and of the character of the duties with which each department is charged, lay foundations for an intelligent citizenship.

Besides this intensive study of the history of the United States in the seventh and eighth years, your Committee would recommend oral lessons on the salient points of general history, taking a full hour of sixty minutes weekly — and preferably all at one time — for the sake of the more systematic treatment of the subject of the lesson and the deeper impression made on the mind of the pupil.

E. Other branches.

Your Committee has reviewed the staple branches of the elementary course of study in the light of their educational scope and significance. Grammar, literature, arithmetic, geography, and history are the five branches upon which the disciplinary work of the elementary school is concentrated. Inasmuch as reading is the first of the scholastic arts, it is interesting to note that the whole elementary course may be described as an extension of the process of learning the

art of reading. First comes the mastering of the colloquial vocabulary in printed and script forms. Next come five incursions into the special vocabularies required (*a*) in literature to express the fine shades of emotion and the more subtle distinctions of thought, (*b*) the technique of arithmetic, (*c*) of geography, (*d*) of grammar, (*e*) of history.

In the serious work of mastering these several technical vocabularies the pupil is assigned daily tasks that he must prepare by independent study. The class exercise or recitation is taken up with examining and criticising the pupil's oral statements of what he has learned, especial care being taken to secure the pupil's explanation of it in his own words. This requires paraphrases and definitions of the new words and phrases used in technical and literary senses, with a view to insure the addition to the mind of the new ideas corresponding to the new words. The misunderstandings are corrected and the pupil set on the way to use more critical alertness in the preparation of his succeeding lessons. The pupil learns as much by the recitations of his fellow-pupils as he learns from the teacher, but not the same things. He sees in the imperfect statements of his classmates that they apprehended the lesson with different presuppositions and consequently have seen some phases of the subject that escaped his observation, while they in turn have missed points which he had noticed quite readily. These different points of view become more or less his own, and he may be said to grow by adding to his own mind the minds of others.

It is clear that there are other branches of instruction that may lay claim to a place in the course of study in the elementary school; for example, the various branches of natural science, vocal music, manual training, physical culture, drawing, etc.

Here the question of another method of instruction is suggested. There are lessons that require previous preparation by the pupil himself — there are also lessons that may be taken up without such preparation and conducted by the teacher, who leads the exercise and furnishes a large part of the information to be learned, enlisting the aid of members of the class for the purpose of bringing home the new material to their actual experience. Besides these, there are mechanical exercises for purposes of training, such as drawing, penmanship, and calisthènics.

In the first place, there is industrial and æsthetic drawing, which should have a place in all elementary school work. By it is secured the training of the hand and eye. Then, too, drawing helps in all the other branches that require illustration. Moreover, if used in the study of the great works of art in the way hereinbefore mentioned, it helps to cultivate the taste and prepares the future workman for a more useful and lucrative career, inasmuch as superior taste commands higher wages in the finishing of all goods.

Natural science claims a place in the elementary school not so much as a disciplinary study side by side with grammar, arithmetic, and history, as a training in habits of observation and in the use of the technique by which such sciences are expounded. With a knowledge of the technical terms and some training in the methods of original investigation employed in the sciences, the pupil broadens his views of the world and greatly increases his capacity to acquire new knowledge. For the pupil who is unacquainted with the technique of science has to pass without mental profit the numerous scientific allusions and items of information which more and more abound in all our literature, whether of an ephemeral or a permanent character. In an age whose proudest boast is the

progress of science in all domains, there should be in the elementary school, from the first, a course in the elements of the sciences. And this is quite possible; for each science possesses some phases that lie very near to the child's life. These familiar topics furnish the doors through which the child enters the various special departments. Science, it is claimed, is nothing if not systematic. Indeed, science itself may be defined as the interpretation of each fact through all other facts of a kindred nature. Admitting that this is so, it is no less true that pedagogic method begins with the fragmentary knowledge possessed by the pupil and proceeds to organize it and build it out systematically in all directions. Hence any science may be taken up best on the side nearest the experience of the pupil and the investigation continued until the other parts are reached. Thus the pedagogical order is not always the logical or scientific order. In this respect it agrees with the order of discovery, which is usually something quite different from the logical order; for that is the last thing discovered. The natural sciences have two general divisions: one relating to inorganic matter, as physics and chemistry, and one relating to organic, as botany and zoölogy. There should be a spiral course in natural science, commencing each branch with the most interesting phases to the child. A first course should be given in botany, zoölogy, and physics, so as to treat of the structure and uses of familiar plants and animals, and the explanation of physical phenomena as seen in the child's playthings, domestic machines, etc. A second course, covering the same subjects, but laying more stress on classification and functions, will build on to the knowledge already acquired from the former lessons and from his recently acquired experience. A third course of weekly lessons, conducted by the

teacher as before in a conversational style, with experiments and with a comparison of the facts of observation already in the possession of the children, will go far to helping them to an acquisition of the results of natural science. Those of the children specially gifted for observation in some one or more departments of nature will be stimulated and encouraged to make the most of their gifts.

In the opinion of your committee, there should be set apart a full hour each week for drawing and the same amount for oral lessons in natural science.

The oral lessons in history have already been mentioned. The spiral course, found useful in natural science because of the rapid change in capacity of comprehension by the pupil from his sixth to his fourteenth year, will also be best for the history course, which will begin with biographical adventures of interest to the child, and possessing an important historical bearing. These will proceed from the native land first to England, the parent country, and then to the classic civilizations (Greece and Rome being, so to speak, the grandparent countries of the American colonies). These successive courses of oral lessons adapted respectively to the child's capacity will do much to make the child well informed on this topic. Oral lessons should never be mere lectures, but more like Socratic dialogues, building up a systematic knowledge partly from what is already known, partly by new investigations, and partly by comparison of authorities.

The best argument in favor of weekly oral lessons in natural science and general history is the actual experiences of teachers who have for some time used the plan. It has been found that the lessons in botany, zoölogy, and physics give the pupil much aid in learning his geography, and other lessons relating to nature, while

the history lessons assist very much his comprehension of literature, and add interest to geography.

It is understood by your Committee that the lessons in physiology and hygiene (with special reference to the effects of stimulants and narcotics) required by State laws should be included in this oral course in natural science. Manual training, so far as the theory and use of the tools for working in wood and iron are concerned, has just claims on the elementary school for a reason similar to that which admits natural science. From science have proceeded useful inventions for the aid of all manner of manufactures and transportation. The child of to-day lives in a world where machinery is constantly at his hand. A course of training in wood- and iron-work, together with experimental knowledge of physics or natural philosophy, makes it easy for him to learn the management of such machines. Sewing and cookery have not the same, but stronger claims for a place in school. One-half day in each week for one-half a year each in the seventh and eighth grades will suffice for manual training, the sewing and cookery being studied by the girls, and the wood- and iron-work by the boys. It should be mentioned, however, that the advocates of manual training in iron- and wood-work recommend these branches for secondary schools, because of the greater maturity of body, and the less likelihood to acquire wrong habits of manipulation, in the third period of four years of school.

Vocal music has long since obtained a well-established place in all elementary schools. The labors of two generations of special teachers have reduced the steps of instruction to such simplicity that whole classes may make as regular progress in reading music as in reading literature.

In regard to physical culture your Committee is

agreed that there should be some form of special daily exercises amounting in the aggregate to one hour each week, the same to include the main features of calisthenics, and German, Swedish, or American systems of physical training, but not to be regarded as a substitute for the old-fashioned recess, established to permit the free exercise of the pupils in the open air. Systematic physical training has for its object rather the will training than recreation, and this must not be forgotten. To go from a hard lesson to a series of calisthenic exercises is to go from one kind of will training to another. Exhaustion of the will should be followed by the caprice and wild freedom of the recess. But systematic physical exercise has its sufficient reason in its aid to a graceful use of the limbs, its development of muscles that are left unused or rudimentary unless called forth by special training, and for the help it gives to the teacher in the way of school discipline.

Your Committee would mention in this connection instruction in morals and manners, which ought to be given in a brief series of lessons each year with a view to build up in the mind a theory of the conventionalities of polite and pure-minded society. If these lessons are made too long or too numerous, they are apt to become offensive to the child's mind. It is of course understood by your Committee that the substantial moral training of the school is performed by the discipline rather than by the instruction in ethical theory. The child is trained to be regular and punctual, and to restrain his desire to talk and whisper — in these things gaining self-control day by day. The essence of moral behavior is self-control. The school teaches good behavior. The intercourse of a pupil with his fellows without evil words or violent actions is insisted on and secured. The higher moral qualities of truth-telling and sincerity are taught in every class exercise that lays *stress on accuracy* of statement.

Your Committee has already discussed the importance of teaching something of algebraic processes in the seventh and eighth grades with the view to obtaining better methods of solving problems in advanced arithmetic; a majority of your Committee are of the opinion that formal English grammar should be discontinued in the eighth year, and the study of some foreign language, preferably that of Latin, substituted. The educational effect on an English-speaking pupil of taking up a language which, like Latin, uses inflections instead of prepositions, and which further differs from English by the order in which its words are arranged in the sentence, is quite marked, and a year of Latin places a pupil by a wide interval out of the range of the pupil who has continued English grammar without taking up Latin. But the effect of the year's study of Latin increases the youth's power of apperception in very many directions by reason of the fact that so much of the English vocabulary used in technical vocabularies, like those of geography, grammar, history, and literature, is from a Latin source, and besides there are so many traces in the form and substance of human learning of the hundreds of years when Latin was the only tongue in which observation and reflection could be expressed.

Your Committee refers to the programme given later in this report for the details of co-ordinating these several branches already recommended.

The difference between elementary and secondary studies.

In recommending the introduction of algebraic processes in the seventh and eighth years — as well as in the recommendation just now made to introduce Latin in the eighth year of the elementary course — your *Committee* has come face to face with the question

of the intrinsic difference between elementary and secondary studies.

Custom has placed algebra, geometry, the history of English literature, and Latin in the rank of secondary studies; also general history, physical geography, and the elements of physics and chemistry. In a secondary course of four years trigonometry may be added to the mathematics; some of the sciences whose elements are used in physical geography may be taken up separately in special treatises, as geology, botany, and physiology. There may be also a study of whole works of English authors, as Shakespeare, Milton, and Scott. Greek is also begun in the second or third year of the secondary course. This is the custom in most public high schools. But in private secondary schools Latin is begun earlier, and so, too, Greek, algebra, and geometry. Sometimes geometry is taken up before algebra, as is the custom in German schools. These arrangements are based partly on tradition, partly on the requirements of higher institutions for admission, and partly on the ground that the intrinsic difficulties in these studies have fixed their places in the course of study. Of those who claim that there is an intrinsic reason for the selection and order of these studies, some base their conclusions on experience in conducting pupils through them, others on psychological grounds. The latter contend, for example, that algebra deals with general forms of calculation, while arithmetic deals with the particular instances of calculation. Whatever deals with the particular instance is relatively elementary, whatever deals with the general form is relatively secondary. In the expression $a+b=c$ algebra indicates the form of all addition. This arithmetic cannot do, except in the form of a verbal rule describing the steps of the operation: its examples are all special instances

falling under the general form given in algebra. If, therefore, arithmetic is an elementary branch, algebra is relatively to it a secondary branch. So, too, geometry, though not directly based on arithmetic, has to presuppose an acquaintance with it when it reduces spatial functions into numerical forms, as, for example, in the measurement of surfaces and solids, and in ascertaining the ratio of the circumference to the radius, and of the hypothenuse to the two other sides of the right-angled triangle. Geometry, moreover, deals with necessary relations; its demonstrations reach universal and necessary conclusions, holding good not merely in such material shapes as we have met with in actual experience, but with all examples possible, past, present, or future. Such knowledge transcending experience is intrinsically secondary as compared with the first acquaintance with geometric shapes in concrete examples.

In the case of geometry it is claimed by some that what is called "inventional geometry" may be properly introduced into the elementary grades. By this some mean the practice with blocks in the shape of geometric solids, and the construction of different figures from the same; others mean the rediscovery by the pupil for himself of the necessary relations demonstrated by Euclid. The former — exercises of construction with blocks — are well enough in the kindergarten, where they assist in learning number, as well as in the analysis of material forms. But its educational value is small for pupils advanced into the use of books. The original discovery of Euclid's demonstrations, on the other hand, belongs more properly to higher education than to elementary. In the geometrical text-books, recently introduced into secondary schools, there is so much of original demonstration required that the teacher is greatly embarrassed on

account of the differences in native capacity for mathematics that develop among the pupils of the same class in solving the problems of invention. A few gifted pupils delight in the inventions, and develop rapidly in power, while the majority of the class use too much time over them, and thus rob the other branches of the course of study, or else fall into the bad practice of getting help from others in the preparation of their lessons. A few in every class fall hopelessly behind and are discouraged. The result is an attempt on the part of the teacher to correct the evil by requiring a more thorough training in the mathematical studies preceding, and the consequent delay of secondary pupils in the lower grades of the course in order to bring up their "inventional geometry." Many, discouraged, fail to go on; many more fail to reach higher studies because unable to get over the barrier unnecessarily placed before them by teachers who desire that no pupils except natural geometricians shall enter into higher studies.

Physical geography in its scientific form is very properly made a part of the secondary course of study. The pupil in his ninth year of work can profitably acquire the scientific technique of geology, botany, zoölogy, meteorology, and ethnology, and in the following years take up those sciences separately and push them further, using the method of actual investigation. The subject-matter of physical geography is of very high interest to the pupil who has studied geography in the elementary grades after an approved method. It takes up the proximate grounds and causes for the elements of difference on the earth's surface, already become familiar to him through his elementary studies, and pushes them back into deeper, simpler, and more satisfactory principles. This study performs the work also of correlating the sciences that relate to organic

nature by showing their respective uses to man. From the glimpses which the pupil gets of mineralogy, geology, botany, zoölogy, ethnology, and meteorology in their necessary connection as geographic conditions he sees the scope and grand significance of those separate inquiries. A thirst is aroused in him to pursue his researches into their domains. He sees, too, the borderlands in which new discoveries may be made by the enterprising explorer.

Physics, including what was called until recently "natural philosophy," after Newton's *Principia* (*Philosophiæ naturalis principia mathematica*), implies more knowledge of mathematics for its thorough discussion than the secondary pupil is likely to possess. In fact, the study of this branch in college thirty years ago was crippled by the same cause. It should follow the completion of analytical geometry. Notwithstanding this, a very profitable study of this subject may be made in the second year of the high school or preparatory school, although the formulas can then be understood in so far as they imply elementary algebra only. The pupil does not get the most exact notions of the quantitative laws that rule matter in its states of motion and equilibrium, but he does see the action of forces as qualitative elements of phenomena, and understand quite well the mechanical inventions by which men subdue them for his use and safety. Even in the elementary grades the pupil can seize very many of these qualitative aspects and learn the explanation of the mechanical phenomena of nature, and other applications of the same principles in invention, as, for example, gravitation in falling bodies: its measurement by the scales; the part it plays in the pump, the barometer, the pendulum; cohesion in mud, clay, glue, paste, mortar, cement, etc.; capillary attraction in wicks, sponges, sugar, the sap in plants; the ap-

plications of lifting by the lever, pulley, inclined plane, wedge, and screw; heat in the sun, combustion, friction, steam, thermometer, conduction, clothing, cooking, etc.; the phenomena of light, electricity, magnetism, and the explanation of such mechanical devices as spectacles, telescopes, microscopes, prisms, photographic cameras, electric tension in bodies, lightning, mariner's compass, horseshoe magnet, the telegraph, the dynamo. This partially qualitative study of forces and mechanical inventions has the educational effect of enlightening the pupil, and emancipating him from the network of superstition that surrounds him in the child world, partly of necessity and partly by reason of the illiterate adults that he sometimes meets with in the persons of nurses, servants, and tradespeople, whose occupations have more attraction for him than those of cultured people. The fairy world is a world of magic, of immediate interventions of supernatural spiritual beings, and while this is proper enough for the child up to the time of the school, and in a lessening degree for some time after, it is only negative and harmful in adult manhood and womanhood. It produces arrested development of powers of observation and reflection in reference to phenomena, and stops the growth of the soul at the infantine stage of development. Neither is this infantine stage of wonder and magic more religious than the stage of disillusion through the study of mathematics and physics. It is the arrest of religious development, also, at the stage of fetichism. The highest religion, that of pure Christianity, sees in the world infinite mediations, all for the purpose of developing independent individuality; the perfection of human souls not only in one kind of piety, namely, that of the heart, but in the piety of the intellect that beholds truth, the piety of the will that does good deeds *wisely*, the piety of the senses that sees the

beautiful and realizes it in works of art. This is the Christian idea of divine Providence as contrasted with the heathen idea of that Providence, and the study of natural philosophy is an essential educational requisite in its attainment, although a negative means. Of course there is danger of replacing the spiritual idea of the divine by the dynamical or mechanical idea, and thus arresting the mind at the stage of pantheism instead of fetichism. But this danger can be avoided by further education through secondary into higher education, whose entire spirit and method are comparative and philosophical in the best sense of the term. For higher education seems to have as its province the correlation of the several branches of human learning in the unity of the spiritual view furnished by religion to our civilization. By it one learns to see each branch, each science or art or discipline, in the light of all the others. This higher or comparative view is essential to any completeness of education, for it alone prevents the one-sidedness of hobbies, or "fads," as they are called in the slang of the day. It prevents also the bad effects that flow from the influence of what are termed "self-educated men," who for the most part carry up with them elementary methods of study, or at best, secondary methods, which accentuate the facts and relations of natural and spiritual phenomena, but do not deal with their higher correlations. The comparative method cannot, in fact, be well introduced until the student is somewhat advanced, and has already completed his elementary course of study dealing with the immediate aspects of the world, and his secondary course dealing with the separate formal and dynamical aspects that lie next in order behind the facts of first observation. Higher education in a measure unifies these separate formal and dynamic aspects, corrects *their one*-sidedness, and prevents the danger of what

is so often noted in the self-educated men who unduly exaggerate some one of the subordinate aspects of the world and make it a sort of first principle.

Here your Committee finds in its way the question of the use of the full scientific method in the teaching of science in the elementary school. The true method has been called the method of investigation, but that method as used by the child is only a sad caricature of the method used by the mature scientific man, who has long since passed through the fragmentary observation and reflection that prevail in the period of childhood, as well as the tendencies to exaggeration of the importance of one or another branch of knowledge at the expense of the higher unity that correlates all; an exaggeration that manifests itself in the possession and use of a hobby. The ideal scientific man has freed himself from obstacles of this kind, whether psychological or objective. What astronomical observers call the subjective coefficient must be ascertained and eliminated from the record that shows beginnings, endings, and rates. There is a possibility of perfect specialization in a scientific observer only after the elementary and secondary attitudes of mind have been outgrown. An attempt to force the child into the full scientific method by specialization would cause an arrest of his development in the other branches of human learning outside of his specialty. He could not properly inventory the data of his own special sphere unless he knew how to recognize the defining limits or boundaries that separate his province from its neighbors. The early days of science abounded in examples of confusion of provinces in the inventories of their data. It is difficult, even now, to decide where physics and chemistry leave off, and biology begins.

Your Committee does not attempt to state the exact proportion in which the child, at his various degrees

of advancement may be able to dispense with the guiding influence of teacher and text-book in his investigations, but they protest strongly against the illusion under which certain zealous advocates of the early introduction of scientific method seem to labor. They ignore in their zeal the reduction that is to be made for the guiding hand of the teacher who silently furnishes to the child the experience that he lacks, and quietly directs his special attention to this or to that phase, and prevents him from hasty or false generalization as well as from undue exaggeration of single facts or principles. Here the teacher adds the needed scientific notions which the child lacks, but which the mature scientist possesses for himself.

It is contended by some that the scientific frame of mind is adapted only to science, but not to art, literature, and religion, which have something essential that science does not reach, not because of the incompleteness of the sciences themselves, but because of the attitude of the mind assumed in the observation of nature. In analytic investigation there is isolation of parts one from another, with a view to find the sources of the influences which produce the phenomena shown in the object. The mind brings everything to the test of this idea. Every phenomenon that exists comes from beyond itself, and analysis will be able to trace the source.

Now, this frame of mind, which insists on a foreign origin of all that goes to constitute an object, debars itself in advance from the province of religion, art, and literature as well as of philosophy. For self-determination, personal activity, is the first principle assumed by religion, and it is tacitly assumed by art and literature, Classic and Christian. The very definition of philosophy implies this, for it is the attempt to explain the world by the assumption of a first principle, and to

show that all classes of objects imply that principle as ultimate presupposition. According to this view it is important not to attempt to hasten the use of a strictly scientific method on the part of the child. In his first years he is acquiring the results of civilization rather as an outfit of habits, usages, and traditions than as a scientific discovery. He cannot be expected to stand over against the culture of his time, and challenge one and all of its conventionalities to justify themselves before his reason. His reason is too weak. He is rather in the imitation stage of mind than in that of criticism. He will not reach the comparative or critical method until the era of higher education.

However this may be, it is clear that the educational value of science and its method is a very important question, and that on it depends the settlement of the question where specialization may begin. To commence the use of the real scientific method would imply a radical change also in methods from the beginning. This may be realized by considering the hold which even the kindergarten retains upon symbolism and upon art and literature. But in the opinion of a majority of your Committee natural science itself should be approached, in the earliest years of the elementary school, rather in the form of results with glimpses into the methods by which these results were reached. In the last two years (the seventh and eighth) there may be some strictness of scientific form and an exhibition of the method of discovery. The pupil, too, may to some extent put this method in practice himself. In the secondary school there should be some laboratory work. But the pupil cannot be expected to acquire for himself fully the scientific method of dealing with nature until the second part of higher education — its post-graduate work. Nevertheless this good should be kept in view from the first year of the ele-

mentary school, and there should be a gradual and continual approach to it.

In the study of general history appears another branch of the secondary course. History of the native land is assumed to be an elementary study. History of the world is certainly a step further away from the experience of the child. It is held by some teachers to be in accordance with proper method to begin with the foreign relations of one's native land and to work outward to the world-history. The European relations involved in the discovery and colonization of America furnish the only explanation to a multitude of questions that the pupil has started in the elementary school. He should move outward from what he has already learned, by the study of a new concentric circle of grounds and reasons, according to this view. This, however, is not the usual course taken. On beginning secondary history the pupil is set back face to face with the period of tradition, just when historic traces first make their appearance. He is, by this arrangement, broken off from the part of history that he has become acquainted with, and made to grapple with that period which has no relation to his previous investigations. It is to be said, however, that general history lays stress on the religious thread of connection, though less now than formerly. The world history is a conception of the great Christian thinker, St. Augustine, who held that the world and its history is a sort of antiphonic hymn, in which God reads his counsels, and the earth and man read the responses. He induced Orosius, his pupil, to sketch a general history in the spirit of his view. It was natural that the Old Testament histories, and especially the chapters of Genesis, should furnish the most striking part of its contents. This general history was connected with religion, and brought closer

to the experience of the individual than the history of his own people. To commence history with the Garden of Eden, the Fall of Man, and the Noachian Deluge was to begin with what was most familiar to all minds, and most instructive, because it concerned most nearly the conduct of life. Thus religion furnished the apperceptive material by which the early portions of history were recognized, classified, and made a part of experience.

Now that studies in archæology, especially those in the Nile and Euphrates valleys, are changing the chronologies and the records of early times and adding new records of the past, bringing to light national movements and collisions of peoples, together with data by which to determine the status of their industrial civilization, their religious ideas, and the form of their literature and art, the concentric arrangement of all this material around the history of the chosen people as a nucleus is no longer possible. The question has arisen, therefore, whether general history should not be rearranged for the secondary school, and made to connect with American history for apperceptive material rather than with Old Testament history. To this it has been replied with force that the idea of a world history, as St. Augustine conceived it, is the noblest educative ideal ever connected with the subject of history. Future versions of general history will not desert this standpoint, we are told, even if they take as their basis that of ethnology and anthropology, for these, too, will exhibit a plan in human history — an educative principle that leads nations toward freedom and science, because the Creator of nature has made it, in its fundamental constitution, an evolution or progressive development of individuality. Thus the idea of divine Providence is retained, though made more comprehensive by bringing the whole content of *natural laws within* his will as his method of work.

These considerations, we are reminded by the partisans of humanity studies, point back to the educative value of history as corrective of the one-sidedness of the method of science. Science seeks explanation in the mechanical conditions of, and impulses received from, the environment, while history keeps its gaze fixed on human purposes, and studies the genesis of national actions through the previous stages of feelings, convictions, and conscious ideas. In history the pupil has for his object self-activity, reaction against environment, instead of mechanism, or activity through another.

The history of English literature is another study of the secondary school. It is very properly placed beyond the elementary school, for as taught it consists largely of the biographies of men of letters. The pupils who have not yet learned any great work of literature should not be pestered with literary biography, for at that stage the greatness of the men of letters cannot be seen. Plutarch makes great biographies because he shows heroic struggles and great deeds. The heroism of artists and poets consists in sacrificing all for the sake of their creations. The majority of them come off sadly at the hands of the biographer, for the reason that the very sides of their lives are described which they had slighted and neglected for the sake of the Muses. The prophets of Israel did not live in city palaces, but in caves; they did not wear fine raiment, nor feed sumptuously, nor conform to the codes of polite society. They were no courtiers when they approached the king. They neglected all the other institutions — family, productive industry, and state — for the sake of one, the Church, and even that not the established ceremonial of the people, but a higher and more direct communing with Jehovah. So with artists and men of letters, it is

more or less the case, that the institutional side of their lives is neglected, or unsymmetrical, or if this is not the case, it will be found prosaic and uneventful, throwing no light on their matchless productions.

For these reasons, should not the present use of literary biography as it exists in secondary schools, and is gradually making its way into elementary schools, be discouraged, and the time now given to it devoted to the study of literary works of art? It will be admitted that the exposure of the foibles of artists has an immoral tendency on youth: for example, one affects to be a poet, and justifies laxity and self-indulgence through the example of Byron. Those who support this view hold that we should not dignify the immoral and defective side of life by making it a branch of study in school.

Correlation by synthesis of studies.

Your Committee would mention another sense in which the expression correlation of studies is sometimes used. It is held by advocates of an artificial centre of the course of study. They use, for example, De Foe's Robinson Crusoe for a reading exercise, and connect with it the lessons in geography and arithmetic. It has been pointed out by critics of this method that there is always danger of covering up the literary features of the reading matter under accessories of mathematics and natural science. If the material for other branches is to be sought for in connection with the literary exercise, it will distract the attention from the poetic unity. On the other hand, arithmetic and geography cannot be unfolded freely and comprehensively if they are to wait on the opportunities afforded in a poem or novel for their development. A correlation of this kind, instead of

being a deeper correlation, such as is found in all parts of human learning by the studies of the college and university, is rather a shallow and uninteresting kind of correlation, that reminds one of the system of mnemonics, or artificial memory, which neglects the association of facts and events with their causes and the history of their evolution, and looks for unessential quips, puns, or accidental suggestions with a view to strengthening the memory. The effect of this is to weaken the power of systematic thinking which deals with essential relations, and substitute for it a chaotic memory that ties together things through false and seeming relations, not of the things and events, but of the words that denote them.

The correlation of geography and arithmetic and history in and through the unity of a work of fiction is at best an artificial correlation, which will stand in the way of the true objective correlation. It is a temporary scaffolding made for school purposes. Instruction should avoid such temporary structures as much as possible, and when used they should be only used for the day, and not for the year, because of the danger of building up an apperceptive centre in the child's mind that will not harmonize with the true apperceptive centre required by the civilization. The story of Robinson Crusoe has intense interest to the child as a lesson in sociology, showing him the helplessness of isolated man and the re-enforcement that comes to him through society. It shows the importance of the division of labor. All children should read this book in the later years of the elementary course, and a few profitable discussions may be had in school regarding its significance. But De Foe painted in it only the side of adventure that he found in his countrymen in his epoch, England after the defeat of the Armada having taken up a career of

conquest on the seas, ending by colonization and a world commerce. The liking for adventure continues to this day among all Anglo-Saxon peoples, and beyond other nationalities there is in English-speaking populations a delight in building up civilization from the very foundation. This is only, however, one phase of the Anglo-Saxon mind. Consequently the history of Crusoe is not a proper centre for a year's study in school. It omits cities, governments, the world commerce, the international process, the Church, the newspaper and book from view, and they are not even reflected in it.

Your Committee would call attention in this connection to the importance of the pedagogical principle of analysis and isolation as preceding synthesis and correlation. There should be rigid isolation of the elements of each branch for the purpose of getting a clear conception of what is individual and peculiar in a special province of learning. Otherwise one will not gain from each its special contribution to the whole. That there is some danger from the kind of correlation that essays to teach all branches in each will be apparent from this point of view.

III. THE SCHOOL PROGRAMME.

In order to find a place in the elementary school for the several branches recommended in this report, it will be necessary to use economically the time allotted for the school term, which is about two hundred days, exclusive of vacations and holidays. Five days per week and five hours of actual school work or a little less per day, after excluding recesses for recreation, give about twenty-five hours per week. There should be, as far as possible, alternation of study-hours and recitations (the word recitation being

used in the United States for class exercise or lesson conducted by the teacher and requiring the critical attention of the entire class). Those studies requiring the clearest thought should be taken up, as a usual thing, in the morning session, say arithmetic the second half hour of the morning and grammar the half-hour next succeeding the morning recess for recreation in the open air. By some who are anxious to prevent study at home, or at least to control its amount it is thought advisable to place the arithmetic lesson after the grammar lesson, so that the study learned at home will be grammar instead of arithmetic. It is found by experience that if mathematical problems are taken home for solution two bad habits arise; namely, in one case, the pupil gets assistance from his parents or others, and thereby loses to some extent his own power of overcoming difficulties by brave and persistent attacks unaided by others; the other evil is a habit of consuming long hours in the preparation of a lesson that should be prepared in thirty minutes, if all the powers of mind are fresh and at command. An average child may spend three hours in the preparation of an arithmetic lesson. Indeed, in repeated efforts to solve one of the so-called "conundrums," a whole family may spend the entire evening. One of the unpleasant results of the next day is that the teacher who conducts the lesson never knows the exact capacity and rate of progress of his pupils; in the recitation he probes the knowledge and preparation of the pupil, plus an unknown amount of preparatory work borrowed from parents and others. He even increases the length of the lessons, and requires more work at home, when the amount already exceeds the unaided capacity of the pupil.

The lessons should be arranged so as to bring in such exercises as furnish relief from intellectual ten-

sion between others that make large demands on the thinking powers Such exercises as singing and calisthenics, writing and drawing, also reading, are of the nature of a relief from those recitations that tax the memory, critical alertness, and introspection, like arithmetic, grammar, and history.

Your Committee has not been able to agree on the question whether pupils who leave school early should have a course of study different from the course of those who are to continue on into secondary and higher work. It is contended, on the one hand, that those who leave early should have a more practical course, and that they should dispense with those studies that seem to be in the nature of preparatory work for secondary and higher education. Such studies as algebra and Latin, for example, should not be taken up unless the pupil expects to pursue the same for a sufficient time to complete the secondary course. It is replied, on the other hand, that it is best to have one course for all, because any school education is at best but an initiation for the pupil into the art of learning, and that wherever he leaves off in his school course he should continue, by the aid of the public library and home study, in the work of mastering science and literature. It is further contended that a brief course in higher studies, like Latin and algebra, instead of being useless, is of more value than any elementary studies that might replace them. The first ten lessons in algebra give the pupil the fundamental idea of the general expression of arithmetical solutions by means of letters and other symbols. Six months' study of it gives him the power to use the method in stating the manifold conditions of a problem in partnership, or in ascertaining a value that depends on several transformations of the data given. It is claimed, indeed, that the first few lessons in any branch are relatively of

more educational value than an equal number of subsequent lessons, because the fundamental ideas and principles of the new study are placed at the beginning. In Latin, for instance, the pupil learns in his first week's study the, to him, strange phenomenon of a language that performs by inflections what his own language performs by the use of prepositions and auxiliaries. He is still more surprised to find that the order of words in a sentence is altogether different in Roman usage from that to which he is accustomed. He further begins to recognize in the Latin words many roots or stems which are employed to denote immediate sensuous objects, while they have been adopted into his English tongue to signify fine shades of distinction in thought or feeling. By these three things his powers of observation in matters of language are armed, as it were, with new faculties. Nothing that he has hitherto learned in grammar is so radical and far-reaching as what he learns in his first week's study of Latin. The Latin arrangement of words in a sentence indicates a different order of mental arrangement in the process of apprehension and expression of thought. This arrangement is rendered possible by declensions. This amounts to attaching prepositions to the ends of the words, which they thus convert into adjectival or adverbial modifiers; whereas the separate prepositions of the English must indicate by their position in the sentence their grammatical relation. These observations, and the new insight into the etymology of English words having a Latin derivation, are of the nature of mental seeds which will grow and bear fruit throughout life in the better command of one's native tongue. All this will come from a very brief time devoted to Latin in school.

Amount of time for each branch.

Your Committee recommends that an hour of sixty minutes each week be assigned in the programme for each of the following subjects throughout the eight years: physical culture, vocal music, oral lessons in natural science (hygiene to be included among the topics under this head), oral lessons in biography and general history, and that the same amount of time each week shall be devoted to drawing from the second year to the eighth inclusive; to manual training during the seventh and eighth years so as to include sewing and cookery for the girls, and work in wood and iron for the boys.

Your Committee recommends that reading be given at least one lesson each day for the entire eight years, it being understood, however, that there shall be two or more lessons each day in reading in the first and second years, in which the recitation is necessarily very short, because of the inability of the pupil to give continued close attention, and because he has little power of applying himself to the work of preparing lessons by himself. In the first three years the reading should be limited to pieces in the colloquial style, but selections from the classics of the language in prose and in poetry shall be read to the pupil from time to time, and discussions made of such features of the selections read as may interest the pupils. After the third year your Committee believes that the reading lesson should be given to selections from classic authors of English, and that the work of the recitation should be divided between (*a*) the elocution, (*b*) the grammatical peculiarities of the language, including spelling, definitions, syntactical construction, punctuation, and figures of prosody, and (*c*) the literary contents, including the main and accessory ideas, the emotions painted, the

deeds described, the devices of style to produce a strong impression on the reader. Your Committee wishes to lay emphasis on the importance of the last item, — that of literary study, — which should consume more and more of the time of the recitation from grade to grade in the period from the fourth to the eighth year. In the fourth year and previously the first item — that of elocution, to secure distinct enunciation and correct pronunciation — should be most prominent. In the fifth and sixth years the second item — that of spelling, defining, and punctuation — should predominate slightly over the other two items. In the years from the fifth to the eighth there should be some reading of entire stories, such as Gulliver's Travels, Robinson Crusoe, Rip Van Winkle, The Lady of the Lake, Hiawatha, and similar stories adapted in style and subject-matter to the capacity of the pupils. An hour should be devoted each week to conversations on the salient points of the story, its literary and ethical bearings.

Your Committee agrees in the opinion that in teaching language care should be taken that the pupil practices much in writing exercises and original compositions. At first the pupil will use only his colloquial vocabulary, but as he gains command of the technical vocabularies of geography, arithmetic, and history, and learns the higher literary vocabulary of his language, he will extend his use of words accordingly. Daily from the first year the child will prepare some lesson or portion of a lesson in writing. Your Committee has included under the head of oral grammar (from the first to the middle of the fifth year) one phase of this written work devoted to the study of the literary form and the technicalities of composition in such exercises as letter writing, written reviews of the several branches studied, reports of the oral lessons in natural

science and history, paraphrases of the poems and prose literature of the readers, and finally compositions or written essays on suitable themes assigned by the teacher, but selected from the fields of knowledge studied in school. Care should be taken to criticise all paraphrases of poetry in respect to the good or bad taste shown in the choice of words; parodies should never be permitted.

It is thought by your Committee that the old style of composition writing was too formal. It was kept too far away from the other work of the pupil. Instead of giving a written account of what he had learned in arithmetic, geography, grammar, history, and natural science, the pupil attempted artificial descriptions and reflections on such subjects as "Spring," "Happiness," "Perseverance," "Friendship," or something else outside of the line of his school studies.

Your Committee has already expressed its opinion that a good English style is not to be acquired by the study of grammar so much as by familiarity with great masterpieces of literature. We especially recommend that pupils who have taken up the fourth and fifth readers, containing the selections from great authors, should often be required to make written paraphrases of prose or poetic models of style, using their own vocabulary to express the thoughts so far as possible, and borrowing the *recherché* words and phrases of the author, where their own resources fail them. In this way the pupil learns to see what the great author has done to enrich the language and to furnish adequate means of expression for what could not be presented in words before, or at least not in so happy a manner.

Your Committee believes that every recitation is, in one aspect of it, an attempt to express the thoughts and information of the lesson in the pupil's own words, and thus an initial exercise in composition. The regu-

lar weekly written review of the important topics in the several branches studied is a more elaborate exercise in composition, the pupil endeavoring to collect what he knows and to state it systematically and in proper language. The punctuation, spelling, syntax, penmanship, choice of words, and style should not, it is true, be made a matter of criticism in connection with the other lessons, but only in the language lesson proper. But the pupil will learn language, all the same, by the written and oral recitations. The oral grammar lessons, from the first year to the middle of the fifth year, should deal chiefly with the use of language, gradually introducing the grammatical technique as it is needed to describe accurately the correct forms and the usages violated.

Your Committee believes that there is some danger of wasting the time of the pupil in these oral and written language lessons in the first four years by confining the work of the pupil to the expression of ordinary commonplace ideas not related to the subjects of his other lessons, especially when the expression is confined to the colloquial vocabulary. Such training has been severely and justly condemned as teaching what is called prating or gabbling, rather than a noble use of English speech. It is clear that the pupil should have a dignified and worthy subject of composition, and what is so good for his purpose as the themes he has tried to master in his regular lessons? The reading lessons will give matter for literary style, the geography for scientific style, and the arithmetic for a business style; for all styles should be learned.

Your Committee recommends that selected lists of words difficult to spell be made from the reading lessons and mastered by frequent writing and oral spelling during the fourth, fifth, and sixth years.

Your Committee recommends that the use of a text-

book in grammar begin with the second half of the fifth year, and continue until the beginning of the study of Latin in the eighth grade, and that one daily lesson of twenty-five or thirty minutes be devoted to it.

For Latin we recommend one daily lesson of thirty minutes for the eighth year. For arithmetic we recommend number work from the first year to the eighth, one lesson each day, but the use of the text-book in number should not, in our opinion, begin until the first quarter of the third year. We recommend that the applications of elementary algebra to arithmetic, as hereinbefore explained, be substituted for pure arithmetic in the seventh and eighth years, a daily lesson being given.

Your Committee recommends that penmanship as a separate branch be taught in the first six years at least three lessons per week.

Geography, in the opinion of your Committee, should begin with oral lessons in the second year, and with a text-book in the third quarter of the third year, and be continued to the close of the sixth year with one lesson each day, and in the seventh and eighth years with three lessons per week.

History of the United States with the use of a text-book, your Committee recommends for the seventh and the first half of the eighth year, one lesson each day; the Constitution of the United States for the third quarter of the eighth year.

The following schedule will show the number of lessons per week for each quarter of each year: —

Reading. Eight years, with daily lessons.

Penmanship. Six years, ten lessons per week for first two years, five for third and fourth, and three for fifth and sixth.

Spelling Lists. Fourth, fifth, and sixth years, four lessons per week.

Grammar. Oral, with composition or dictation, first year to middle of fifth year, text-book from middle of fifth year to close of seventh year, five lessons per week. (Composition writing should be included under this head. But the written examinations on the several branches should be counted under the head of composition work.)

Latin or French or German. Eighth year, five lessons per week.

Arithmetic. Oral first and second year, text-book third to sixth year, five lessons per week.

Algebra. Seventh and eighth years, five lessons per week.

Geography. Oral lessons second year to middle of third year, text-book from middle of third year, five lessons weekly to seventh year, and three lessons to close of eighth.

Natural Science and Hygiene. Sixty minutes per week, eight years.

History of United States. Five hours per week seventh year and first half of eighth year.

Constitution of United States. Third quarter in the eighth year.

General History and Biography. Oral lessons, sixty minutes a week, eight years.

Physical Culture. Sixty minutes a week, eight years.

Vocal Music. Sixty minutes a week, eight years.

Drawing. Sixty minutes a week, eight years.

Manual Training, Sewing, and Cooking. One-half day each week in seventh and eighth years.

Your Committee recommends recitations of fifteen minutes in length in the first and second years, of twenty minutes in length in the third and fourth years, of twenty-five minutes in the fifth and sixth years, and of thirty minutes in the seventh and eighth.

The results of this programme show for the first and second years twenty lessons a week of fifteen minutes each, besides seven other exercises occupying an average of twelve minutes apiece each day; the total amount of time occupied in the continuous attention of

the recitation or class exercises being twelve hours, or an average of two hours and twenty-four minutes per day.

For the third year twenty lessons a week of twenty minutes each, and five general exercises taking up five hours a week, or an average of one hour per day, giving an average time per day of two hours and twenty minutes for class recitations or exercises.

In the fourth the recitations increase to twenty-four (by reason of four extra lessons in spelling) and the time occupied in recitations and exercises to thirteen hours and an average per day of two hours thirty-six minutes.

BRANCHES.	1st year	2d year	3d year	4th year	5th year	6th year	7th year	8th year
Reading....	10 lessons a week		5 lessons a week					
Writing ...	10 lessons a week		5 lessons a week		3 lessons a week			
Spelling lists				4 lessons a week				
English Grammar	Oral, with composition lessons				5 lessons a week with text-book			
Latin.....								5 lessons
Arithmetic .	Oral, 60 minutes a week		5 lessons a week with text-book					
Algebra							5 lessons a week	
Geography..	Oral, 60 minutes a week		*5 lessons a week with text-book				3 lessons a week	
Natural Science +Hygiene	Sixty minutes a week							
U. S. History							5 lessons a week	
U. S. Constitution								*5 ls
General History	Oral, sixty minutes a week							
Physical Culture	Sixty minutes a week							
Vocal Music	Sixty minutes a week divided into 4 lessons							
Drawing....	Sixty minutes a week							
Man'l Train. or Sewing+ Cookery							One-half day each week	
Number of Less ns	20+7 daily exer.	20+7 daily exer.	20+5 daily exer	24+5 daily exer.	27+5 daily exer.	27+5 daily exer.	23+6 daily exer.	23+6 daily exer.
Total Hours of Recitat'ns	12	12	11⅔	13	16¼	16¼	17½	17½
Length of Recitations	15 min	15 min	20 min	20 min	25 min	25 min	30 min	30 min

* Begins in second half year.

In the fifth and sixth years the number of recitations increases to twenty-seven per week, owing to the addition of formal grammar, and the total number of hours required for all is 16¼ per week, or an average of 3¼ per day.

In the seventh and eighth years the number of lessons decreases to twenty-three, history being added, penmanship and special lessons in spelling discontinued, the time devoted to geography reduced to three lessons a week. But the recitation is increased to thirty minutes in length. Manual training occupies a half-day, or 2½ hours, each week. The total is 19 hours per week, or 3¾ per day.

The foregoing tabular exhibit shows all of these particulars.

IV. METHODS AND ORGANIZATION.

Your Committee is agreed that the time devoted to the elementary school work should not be reduced from eight years, but they have recommended, as hereinbefore stated, that in the seventh and eighth years a modified form of algebra be introduced in place of advanced arithmetic, and that in the eighth year English grammar yield place to Latin. This makes, in their opinion, a proper transition to the studies of the secondary school and is calculated to assist the pupil materially in his preparation for that work. Hitherto, the change from the work of the elementary school has been too abrupt, the pupil beginning three formal studies at once, namely, algebra, physical geography, and Latin.

Your Committee has found it necessary to discuss the question of methods of teaching in numerous instances, while considering the question of educational values and programmes, because the value and time

be criticised as showing confusion of thought or memory, and should be corrected in this sense. But solecisms of speech should be silently noted by the teacher for discussion in the regular language lesson.

The question of promotion of pupils has occupied from time to time very much attention. Your Committee believes that in many systems of elementary schools there is injury done by too much formality in ascertaining whether the pupils of a given class have completed the work up to a given arbitrarily fixed point, and are ready to take up the next apportionment of the work. In the early days of city school systems, when the office of superintendent was first created, it was thought necessary to divide up the graded course of study into years of work, and to hold stated annual examinations to ascertain how many pupils could be promoted to the next grade or year's work. All that failed at this examination were set back at the beginning of the year's work to spend another year in reviewing it. This was to meet the convenience of the superintendent, who, it was said, could not hold examinations to suit the wants of individuals or particular classes. From this arrangement there naturally resulted a great deal of what is called "marking time." Pupils who had nearly completed the work of the year were placed with pupils who had been till now a year's interval below them. Discouragement and demoralization at the thought of taking up again a course of lessons learned once before caused many pupils to leave school prematurely.

This evil has been remedied in nearly one-half of the cities by promoting pupils whenever they have completed the work of a grade. The constant tendency of classification to become imperfect by reason of the difference in rates of advancement of the several pupils owing to disparity in ages, degree of maturity, temper-

ament, and health, makes frequenter classification necessary. This is easily accomplished by promoting the few pupils who distance the majority of their classmates into the next class above, separated as it is, or ought to be, by an interval of less than half a year. The bright pupils thus promoted have to struggle to make up the ground covered in the interval between the two classes, but they are nearly always able to accomplish this, and generally will in two years' time need another promotion from class to class.

The procrustean character of the old city systems has been removed by this device.

There remain for mention some other evils besides bad systems of promotion due to defects of organization. The school buildings are often with superstitious care kept apart exclusively for particular grades of pupils. The central building erected for high school purposes, though only half filled, is not made to relieve the neighboring grammar school, crowded to such a degree that it cannot receive the classes which ought to be promoted from the primary schools. It has happened in such cases that this superstition prevailed so far that the pupils in the primary school building were kept at work on studies already finished, because they could not be transferred to the grammar school.

In all good school systems the pupils take up new work when they have completed the old, and the bright pupils are transferred to higher classes when they have so far distanced their fellows that the amount of work fixed for the average ability of the class does not give them enough to do.

In conclusion, your Committee would state, by way of explanation, that it has been led into many digressions, in illustrating the details of its recommendations in this report, through its desire to make clear the grounds on which it has based its conclusions and

through the hope that such details will call out a still more thorough-going discussion of the educational values of branches proposed for elementary schools, and of the methods by which those branches may be successfully taught.

With a view to increase the interest in this subject, your Committee recommends the publication of selected passages from the papers sent in by invited auxiliary committees and by volunteers, many of these containing valuable suggestions not mentioned in this report.

Organization for City School Systems.

BY PRESIDENT ANDREW S. DRAPER.

[This is the report of a sub-committee of the Fifteen, of which President Draper of the University of Illinois is chairman.

It is understood that the committee is to treat of city school systems, which are so large that persons chosen by the people to manage them, and serving without pay, cannot be expected to transact all the business of the system in person, nor to have personal knowledge of all business transactions, and which are so large that one person employed to supervise the instruction cannot be assumed to personally manage or direct all of the details thereof, but must, in each case, act under plans of organization and administration established by law and through assistants or representatives.

The end for which a school system exists is the *instruction of the children*, attaching to the word instruction the meaning it attains in the mind of a well-educated person, if not in the mind of an educational expert.

To secure this end, no plan of organization alone will suffice. Nothing can take the place of a sincere desire for good schools, of a fair knowledge of what good schools are, and what will make them, of a public spirit and a moral sense on the part of the people, which are spontaneous, or which can be appealed to with confidence. Fortunately, the interest which the people have in their own children is so large, and the anxiety of the community for public order and security is so great, that public sentiment may ordinarily be relied upon, or may

be aroused to action, to choose proper representatives and take proper measures for the administration of the schools. If, in any case, this is not so, there is little hope of efficient schools. Wherever it *is* so, it alone will not suffice, but proper organization may become the instrument of public sentiment, and develop schools which will be equal to the needs of all, and become the safeguards of citizenship Efficient schools can be secured only by providing suitable buildings and appliances, and by keeping them in proper order on the one hand, and, on the other hand, by employing, organizing, aiding, and directing teachers, so that the instruction shall have life and power to accomplish the great end for which schools are maintained.

The circumstances of the case naturally and quickly separate the duties of administration into two great departments, one which manages the business affairs, and the other which supervises the instruction. The business affairs of the school system may be transacted by any citizens of common honesty, correct purposes, and of good business experience and sagacity. The instruction will be ineffective and abnormally expensive unless put upon a scientific educational basis and supervised by competent educational experts.

There will be a waste of money and effort and a lack of results, unless the authorities of these two departments are sympathetic with each other; that is, unless, on the one hand, the business management is sound, is appreciative of good teaching, looks upon it as a scientific and professional employment, and is alert to sustain it; and unless, on the other hand, the instructors are competent and self-respecting, know what good business management is, are glad to uphold it, and are able to respect those who are charged with responsibility for it.

To secure efficiency in these departments, there must be adequate authority and quick public accountability.

The problem is not merely to secure some good schoolhouses, but good schoolhouses wherever needed, and to avoid the use of all houses which are not suitable for use; it is not to get some good teaching, but to prevent all bad teaching, and to advance all the teaching to the highest possible point of special training, professional spirit, and of life-giving power. All of the business matters must be entrusted to competent business hands and managed upon sound business principles; and all of the instruction must be put upon a professional basis. To insure this, there must be deliberation and wisdom in determining policy, and then the power to do what is determined upon must be present and capable of exercise, and the responsibility for the proper exercise of the power must, in each case, be individual and immediate.

It is imperative that we discriminate between the legislative and executive action in organizing and administering the schools. The influences which enter into legislative action, looking to the general organization and work of the schools, must necessarily and fundamentally flow directly from the people and be widely spread. The greater the number of people, in proportion to the entire population, who can be led to take a positive interest and an active part in securing good schools, the better will the schools be, provided the people can secure the complete execution of their purposes and plans. But experience has clearly shown that many causes intervene to prevent the complete execution of such plans, that all the natural enemies of sound administration scent plenty of plunder and are especially active here, that good school administration requires much strength of character, much business experience, much technical knowledge, and can be only measurably satisfactory when the responsibility is adequate, and the penalties for maladministration are severe. Decentralization in making the plan and determining what shall be done, and centralization in execut-

ing the plan and in doing what is to be done, are, perhaps, equally important.

It should be remembered that the character of the school work of a city is not merely a matter of local interest, and that the maintenance of the schools does not rest merely or mainly upon local authority. The people of the municipality, acting, and ordinarily glad to act, but, in any event, being obliged to act, under and pursuant to the law which has been ordained by the sovereign authority of the state, establish and maintain schools. They must have the taxing power which the state alone possesses in order to enable them to proceed at all. They must regard the directions which the state sees fit to give as to the essential character of the schools, when it exercises in their behalf, or when it delegates to them the power of taxation.

The plan should be flexible for good, while inflexible for evil. Meeting essential requirements, the people of the municipality may well be empowered to proceed as much farther as they will in elaborating a system of schools. The higher the plane of average intelligence, and the more generally and the more directly the people act in deciding what shall be done, and the greater the facility and completeness with which the intelligence of the city is able to secure the proper execution of its plans by officers appointed for that purpose, the more elaborate and the more efficient will be the schools, and this should, of course, be provided for.

It is idle to suggest that centering executive functions is unwisely taking power away from the people. The people cannot execute plans themselves. The authority to do it must necessarily be delegated. The question simply is, "Shall it be given to a number of persons, and if so, to how many? Or to only one?" This question is to be decided by experience, and it is, of course, true that experience has not been uniform. But it is doubt-

less true that the general experience of the communities of the country has shown that where purely executive functions are conferred upon a number of persons jointly, they yield to antagonistic influences and shift the responsibility from one to another; and that centering the responsibility for the proper discharge of executive duties upon a single person, who gets the credit of good work and must bear the disgrace or penalty of bad work, and who can quickly be held accountable for misdeeds and inefficiency, has secured the fullest execution of public plans and the largest results. To call this "centralization," with the meaning which commonly attaches to the word, is inaccurate. Instead of removing the power from the people, it is keeping the power closer to the people, and making it possible for the citizen in his individual capacity and for organized bodies of citizens to secure the execution of plans according to the purpose and intent with which those plans were made. Indeed, it is safe to say that experience has shown that this is *the only way* in which to prevent the frequent thwarting of the popular will and the defiance of individuals whose interests are ignored or whose rights are invaded.

But all the people of a city whose population is numbered by hundreds of thousands or millions cannot meet in a legislative assemblage to formulate plans. They cannot gather in mass meetings, and, if they could, mass meetings cannot deliberate. Even their legislative action must flow, not from a primary, but from a representative assembly.

What shall such a representative legislative body be called? How shall it be chosen? Of how many members shall it be composed? And what shall be its powers? These and other similar questions are all important and must be determined by the law-making power of the state. The sentiments of the city, as expressed through the local organizations, and particularly the newspapers, must, of

course, have much weight with the legislature if there is anything like unanimity or any very strong preponderance of opinion in the city, for the plan for which a community expresses a preference will surely be likely to operate most effectually in that community. But the local sentiment is not conclusive. When divided, it is no guide at all. The legislature is to take all the circumstances into consideration, take the world's experience for its guide, and, acting under its responsibilities, it must exercise its high powers in ways which will build up a system of schools in the city likely to articulate with the state educational system and become the effective instrument of developing the intelligence and training the character of the children of the city up to the ideals of the state.

The name of the legislative branch of the school government is not material, and the one to which the people are accustomed may well continue to be employed. There is no name more appropriate than the "Board of Education."

The manner of selecting or appointing the members of this legislative body may turn somewhat upon the circumstances of the city. We are strongly of the opinion that in view of the well-known difficulty about securing the attendance of the most interested and intelligent electors at school elections, as well as because of the apparent impossibility of freeing school elections from political or municipal issues, the better manner of elections is by appointment. If the members of the board are appointed, the mayor of the city is likely to be the official to whom the power of appointment may most safely be entrusted. The mayor is not suggested because his office should sustain any relation to the school system, but in spite of the fact that it does not and should not. The school system should be *absolutely emancipated from partisan politics, and completely dissociated from mu-*

nicipal business. But we think the appointments should be made by some one person, rather than by a board. The mayor is representative of the whole city and all its interests. While not chosen with any reference to the interests of the schools, he may be assumed to have information as to the fitness of citizens for particular responsibilities, and to be desirous of promoting the educational interests of the people. If he is given the power of appointment, he should be particularly enjoined by law to consider the fitness of individuals alone and pay no regard to party affiliations, unless it be to particularly see to it that no one political party has an overwhelming preponderance in the board. The mayor very commonly feels constrained, under the pressure of party expediency, to make so many questionable appointments, that he is only too glad, and particularly so when enjoined by the law, to make very acceptable appintments of members of school boards, in order that he may gratify the better sentiment of the city. We are confident that the problem of getting a representative board of education is not so difficult as many think, if the board is not permitted to make patronage of work and salaried positions at the disposal of the public-school system. Under such circumstances, and more and more so as we have approached such circumstances, appointment in the way we suggest has produced the best school boards in the larger cities of the country.

The members of school boards should be representative of the whole population and of all their common educational interests, and should not be chosen to represent any ward or subdivision of the territory, or any party or element in the political, religious, or social life thereof. Where this principle is not enforced, the members will feel bound to gain what advantage they can for the district or interests they represent; bitter contests will ensue, and the common interests will suffer.

Attempts to eliminate partisanship from school administration, by arraying an equal number of partisans against each other in school boards, do not, at best, lead to an ideal organization. In some instances they have proved fairly successful; in others, very mischievous. The true course is to insist that all who have any share in the management of the schools shall divest themselves of partisanship, whether political or religious, in such management, and give themselves wholly to the high interests entrusted to them. If it be said that this cannot be realized, it may be answered, without admitting it, that even if that were so, it would be no reason why the friends of the schools should not assert the sound principle and secure its enforcement as far as possible. We must certainly give no countenance to make-shifts, which experience has shown to be misleading and expensive. The right must prevail in the end, and the earlier and more strongly it is contended for, the sooner it will prevail.

Relatively small boards are preferable to large ones. In a city of less than a half-million of inhabitants, the number should not exceed nine, and might well not exceed five. In the very largest cities it might be enlarged to fifteen.

The term for which members are appointed should be a reasonably long one, say, five years.

We think it an excellent plan to provide for two branches and sets of powers in the board of education; the one to have the veto power, or, at least, to act as a check upon the acts of the other. This may be accomplished by creating the office of school director and charging the incumbent with executive duties on the business side of the administration, and by giving him the veto power over the acts of the other branch of the board, which may be called the "School Council." Beyond the care and conservation which is ensured by two sets of powers acting against each other, it has the advantage of

giving the chief executive officer of the system just as high and good a title as that of members of the board, it is likely to secure a more representative man, and gives him larger prerogatives in the discharge of his executive duties and better standing among the people, particularly among the employees and teachers associated with the public-school system.

If this plan is adopted, the school director should be required to give his entire time to the duties of his position, and be properly compensated therefor. He should be the custodian of all property and should appoint all assistants, janitors, and workmen, authorized by the board, for the care of the same. He should give bond, with sufficient sureties and penalties, for the faithful and proper discharge of all his duties. He should be authorized by law to expend funds, within a fixed limit, for repairs, appliances, and help, without the action of the board. All contracts should be made by him, and should run in his name, and he should be charged with the responsibility of seeing that they are faithfully and completely executed. All contracts involving more than a limited and fixed sum of money should be let upon bids to be advertised for and oponed in public. He should have a seat in the board of education; should not vote, but should have the power to veto, either absolutely or conditionally, any of the acts of the board, through a written communication. This officer and the school council should together constitute the board of education.

The board of education should be vested with legislative functions only, and be required to act wholly through formal and recorded resolutions. It should determine and direct the general policy of the school system. Within reasonable limits, as to amount, it should be given power, in its discretion, to levy whatever moneys may be needed for school purposes. It should control the expenditure of all moneys beyond a fixed and limited amount, which

may safely and advantageously be left to the discretion of the chief executive business officer. It should authorize, by general resolutions, the appointment of necessary officers and employees in the business department, and the superintendent, assistants, and teachers in the department of instruction, but it should be allowed to make no appointments other than its own clerk. With this necessary exception, single officers should be charged with responsibility for all appointments.

This plan, not in all, but in essential particulars, has been on trial in the city of Cleveland for nearly three years, and has worked with very general acceptability.

If this plan is adopted, the chief executive officer of the system is already provided for and his duties have already been indicated. Otherwise it will be necessary for the board to appoint such an officer. In that event, the law should declare him independent, confer upon him adequate authority for the performance of executive duties, and charge him with responsibility. But we know of no statutory language capable of making an officer appointed by a board, and dependent upon the same board for supplies, independent in fact of the personal wishes of the members of that board. And right here is where the troubles rush in to discredit and damage the school system.

We now come to the subject of paramount importance in making a plan for school government in a great city, namely, the character of the teaching force and the quality of the instruction. A city school system may be able to withstand serious abuses on the business side of its administration and continue to perform its functions with measurable success, but wrongs against the instruction in a short time, prove fatal. The strongest language is too strong. The safety of the republic, the character of American citizenship, are at stake. Governed by the people there is no more dangerous pitfall in its

road than this, that in the mighty cities of the land the comfortable and intelligent masses, who are discriminating more and more closely about the education of their children, shall become dissatisfied with the social status of the teachers and the quality of the teaching in the common schools. In that event they will educate their children at their own expense, and the public schools will become only good enough for those who can afford no better. The only way to avert this is by maintaining the instruction upon a purely scientific and professional footing. This is entirely practicable, but it involves much care and expense in training teachers, the absolute elimination of favoritism from appointments, the security of the right to advancement after appointment, on the basis of merit, and a general leadership which is kindly, helpful, and stimulating to individuals, which can secure harmonious coöperation from all the members, and lends energy and inspiration to the whole body.

This cannot be secured if there is any lack of authority, and experience amply proves that it will not be secured if there is any division of responsibility. The whole matter of instruction must be placed in the hands of a superintendent of instruction, with independent powers and adequate authority, who is charged with full responsibility.

The danger of inconsiderate or improper action by one vested with such powers is, of course, possible, but it is remote. Regardless of the legal powers with which he may be individually vested, he is in fact and in law a part of a large system. He must act through others, and in the presence of multitudes. There is great publicity about all he does. When a single officer carries such responsibility, he is at the focus of all eyes. There are the strongest incentives to right action. He cannot act wrongfully without it is known, at least to many persons. If he is required to act under and pursuant to a plan, the details of which have been announced, and of which we

shall speak in a moment, a wrongful act will be to known the world, and he must bear the responsibility of it, and the danger of maladministration is almost eliminated.

Moreover, we must consider the alternative. It is not in doubt. All who have had any contact with the subject are familiar with it. It is administration by boards or committees, the members of which are not competent to manage professional matters and develop an expert teaching force. Though necessarily inexperienced, they frequently assume the knowledge of the most experienced. They over-ride and degrade a superintendent, when they have the power to do so, until he becomes their mere factotum. For the sake of harmony and the continuance of his position, he concedes, surrenders, and acquiesces in their acts, while the continually increasing teaching force becomes weaker and weaker, and the work poorer and poorer. If he refuses to do this, they precipitate an open rupture, and turn him out of his position. Then they cloud the issues and shift the responsibility from one to another. There are exceptions, of course, but they do not change the rule.

It will be unprofitable to mince words about this all-important matter. If the course of study for the public schools of a great city is to be determined by laymen, it will not be suited to the needs of a community. If teachers are to be appointed by boards or committees, the members of which are particularly sensitive to the desires of people who have votes or influence, looseness of action is inevitable, and unworthy considerations will frequently prevail. If the action of a board or committee be conditioned upon the recommendation of a superintendent, the plan will not suffice. No one person is stronger than the system of which he is a part. Such a plan results in contests between the board and the superintendents, and such a contest is obviously an unequal one. There is little doubt of the outcome. In recommending for the ap-

pointment of teachers, the personal wishes of members of the board, in particular cases, will have to be acquiesced in. If a teacher, no matter how unfit, cannot be dropped from the list without the approval of a board or committee after they have heard from her friends and sympathizers, she will remain indefinitely in the service. This means a low tone in the teaching force and desolation in the work of the schools. If the superintendent accepts the situation, he becomes less and less capable of developing a professional teaching service. If he refuses to accept it, he is very likely to meet humiliation; dismissal is practically inevitable.

The superintendent of instruction should be charged with no duty save the supervision of the instruction, but should be charged with the responsibility of making that professional and scientific, and should be given the position and authority to accomplish that end.

If the board of education is constituted upon the old plan, he must be chosen by the board. If it is constituted upon the Cleveland plan, he may be appointed by the school director, with the approval of two-thirds or three-fourths of the council. The latter plan seems preferable, for it centralizes the main responsibility of this important appointment in a single individual. In either case, the law and the sentiment of the city should direct that the appointee shall be a person liberally educated, professionally trained; one who knows what good teaching is, but is also experienced in administration, in touch with public affairs, and in sympathy with popular feeling.

The term of the superintendent of instruction should be from five to ten years, and until a successor is appointed. In our judgment, it should be determinate, so that there may be a time of public examination, but it should be sufficiently long to enable one to lay foundations and show results, without being carried under by the

prejudices which always follow the first operation of efficient or drastic plans. The salary should be fixed by law, and not subject to change in the middle of a term or except by law.

For reasons already suggested, the superintendent, once appointed, should have power to appoint, from an eligible list, all assistants and teachers authorized by the board, and unlimited authority to assign them to their respective positions, and reassign them or remove them from the force at his discretion.

To secure a position upon the eligible list from which appointments may be made, a candidate, if without experience, should be required to complete the full four years' course of the city high schools, or its equivalent, and in addition thereto pass the examination of the board of examiners, and complete at least a year's course of professional training in a city normal training school under the direction of the superintendent. If the candidate has had, say, three years of successful experience as a teacher, he should be eligible to appointment by passing an examination held by a general examining board. This board may be appointed by the board of education, but should examine none but graduates of the high school and training school, unless specially requested so to do by the superintendent of instruction. The number admitted to the training schools should be limited, and the examinations should be gauged to the prospective needs of the elementary schools for new teachers. The supply of new teachers may well be largely, but should not be wholly, drawn from this local source. The force will gain fresh vitality by some appointments of good and experienced teachers from outside.

The work of putting a large teaching force upon a professional basis, of making the teaching scientific and capable of arousing mind to action, is so difficult that a layman can scarcely appreciate it. It has hardly been

commenced, it has only been made possible, when the avenues of approach to the service have been closed against the unqualified and unworthy. After that the supervision must be close and general, as well as sympathetic and decisive. The superintendent must have expert assistants enough to learn the characteristics and measure the work of every member of the force. They must help and encourage, advise and direct, according to the circumstances of each case. The work must be reduced to a system and the workers brought into harmonious relations. Each room must show neatness and life, and the whole force must show ardor and enthusiasm. By directing the reading, by encouraging an interchange of visits, by organizing clubs for self-improvement, by frequent class and grade and general meetings, the professional spirit may be aroused and the work energized.

Those who show teaching power, versatility, amiability, reliability, steadiness, and growth must be rewarded with the highest positions: those who lack fibre, who have no energy, who are incapable of enthusiasm, who will not work agreeably with their associates, must go upon the retired list. Directness and openness must be encouraged. Attempts to invoke social, political, religious, or other outside influences to secure preferment must operate to close the door to advancement. In general and in particular, bad teaching must be prevented. In every room a firm and kindly management must prevail and good teaching must be apparent. All must work along common lines which will ensure general and essential ends. Until a teacher can do this and can be relied upon to do it, she must be helped and directed: when it is manifest that she cannot or will not do it, she must be dismissed; when she does show that she can do it and wants to do it, she must be left to exercise her own judgment and originality and do it in her own way. In the schoolroom the teacher must be secure against interfer-

ence. In all the affairs of the school her judgment must be trusted to the utmost limit of safety. Then judgment will strengthen, and self-respect and public respect will grow. The qualities which develop in the teacher will develop in the school. To develop these qualities with any degree of uniformity, in a large teaching force, requires steady and uniform treatment through a long course of years under superintendence which is professional, strong, just, and courageous, which has ample assistance and authority, which is worthy of public confidence, and knows how to marshal facts, present arguments, and appeal to the intelligence and integrity of the community with success.

It is the business of the plan of organization to secure such superintendence. It cannot be secured through an ordinary board of education operating on the old plan. It is well known what the influences are which are everywhere prevalent and must inevitably prevent it. It may be secured in the law, and it must be secured there, or it will not be secured at all.

In concluding this portion of the report, the committee indicates briefly the principles which must necessarily be observed in framing a plan of organization and government in a large city school system.

First.—The affairs of the schools should not be mixed up with partisan contents or municipal business.

Second—There should be a sharp distinction between legislative functions and executive duties.

Third.—Legislative functions should be clearly fixed by statute and be exercised by a relatively small board, each member of which board is representative of the whole city. This board, within statutory limitations, should determine the policy of the system, levy taxes, and control the expenditures. It should make no appointments. Every act should be by a recorded resolution. It is preferable that this board be created by appointment

rather than election, and that it be constituted of two branches acting against each other.

Fourth.—Administration should be separated into two great independent departments, one of which manages the business interests and the other of which supervises the instruction. Each of these should be wholly directed by a single official, who is vested with ample authority and charged with full responsibility for sound administration.

Fifth.—The chief executive officer on the business side should be charged with the care of all property, and with the duty of keeping it in suitable condition; he should provide all necessary furnishings and appliances; he should make all agreements and see that they are properly performed; he should appoint all assistants, janitors, and workmen. In a word, he should do all that the law contemplates, and all that the board authorizes, concerning the business affairs of the school system, and when anything goes wrong, he should answer for it. He may be appointed by the board, but we think it preferable that he be chosen in the same way the members of the board are chosen, and be given a veto upon the acts of the board.

Sixth. — The chief executive officer of the department of instruction should be given a long term, and may be appointed by the board. If the board is constituted of two branches, he should be nominated by the business executive and confirmed by the legislative branch. Once appointed, he should be independent. He should appoint all authorized assistants and teachers from an eligible list, to be constituted as provided by law. He should assign to duties and discontinue services for cause at his discretion. He should determine all matters relating to instruction. He should be charged with the responsibility of developing a professional and enthusiastic teaching force and of making all the teaching scientific and forceful. He must perfect the organization of his department,

and make and carry out plans to accomplish this. If he cannot do this in a reasonable time, he should be superseded by one who can.

The government of a vast city school system comes to have an autonomy which is largely its own, and almost independent of direction or restraint. The volume of business which this government transacts is represented only by millions of dollars; it calls not only for the highest sagacity and the ripest experience, but also for much special information relating to school property and school affairs. Even more important than this is the fact that this government controls and determines the educational policy of the city and carries on the instruction of tens or hundreds of thousands of children, and this instruction is of little value, and perhaps vicious, unless it is professional and scientific. This government is representative. All citizens are compelled to support it, and all have large interests which it is bound to promote. Every parent has rights which it is the duty of this school government to protect and enforce. When government exacts our support of public education, when it comes into our homes and takes our children into its custody and instructs them according to its will, we acquire a right which is as exalted as any right of property, or of person, or of conscience can be, and that is the right to know that the environment is healthful, that the management is kindly and ennobling, and that the instruction is rational and scientific. It is needless to say to what extent these interests are impeded or blocked, or how commonly these rights of citizenship and of parentage are denied or defied, or how helpless the individual is who seeks their enforcement, under the system of school government which has heretofore obtained in some of the great cities of the country. This is not surprising. It is only the logical result of the rapid growth of cities, of a marvelous advance in knowledge of what is needed in the

schools, of the antagonism of selfish interests, by which all public administration, and particularly school administration, is encompassed, and of the lack of plan and system, the confusion of powers, the absence of individual responsibility, in the government of a system of schools. By the census of 1890 there are seven cities in the United States each with a population greater than any one of sixteen states. The aggregate population of twelve cities exceeds the aggregate population of twenty states. Government for education certainly requires as strong and responsible an organization as government for any other purpose. These great centres of population, with their vast and complex educational problems, have passed the stage when government by the time-honored commission will suffice. No popular government ever determined the policy and administered the affairs of such large bodies of people successfully, ever transacted such a vast volume of business satisfactorily, ever promoted high and beneficent ends, ever afforded protection to the rights of each individual of the great multitude, unless in its plan of organization there was an organic separation of executive, legislative, and judicial functions and powers. All the circumstances of the case and the uniform experience of the world forbid our expecting any substantial solution of the problem we are considering until it is well settled in the sentiments of the people that the school systems of the greatest cities are only a part of the school systems of the states of which these cities form a part, and are subject to the legislative authority thereof; until there is a plan of school government in each city which differentiates executive acts from legislative functions; which emancipates the legislative branch of that government from the influence of pelf-seekers; which fixes upon individuals the responsibility for executive acts, either performed or omitted; which gives to the intelligence of the community the power to influence legislation and exact

perfect and complete execution; which gives every citizen whose interests are ignored, or whose rights are invaded, a place for complaint and redress; and which puts the business interests upon a business footing, the teaching upon an expert basis, and gives to the instruction that protection and encouragement which is vital to the development of all professional and scientific work.

On the Training of Teachers.

BY SUPERINTENDENT H. S. TARBELL, PROVIDENCE.

[Report of the Fifteen. Read at the Cleveland meeting of the Department of Superintendence, February 19, 1895.]

This report treats of the training of elementary and secondary teachers, considering first that training which should precede teaching in elementary schools. By elementary schools are meant the primary and grammar departments of graded schools, and ungraded or rural schools.

That teachers are "born, not made," has been so fully the world's thought until the present century that a study of subjects, without any study of principles or methods of teaching, has been deemed quite sufficient. Modern educational thought and modern practice, in all sections where excellent schools are found, confirm the belief that there is a profound philosophy on which educational methods are based, and that careful study of this philosophy and its application under expert guidance are essential to making fit the man born to teach.

Conditions for professional training — age and attainments.

It is a widely prevalent doctrine, to which the customs of our best schools conform, that teachers of elementary schools should have a secondary or high school education, and that teachers of high schools should have a collegiate education. Your committee

believe that these are the minimum acquirements that can generally be accepted, that the scholarship, culture, and power gained by four years of study in advance of the pupils are not too much to be rightfully demanded, and that as a rule no one ought to become a teacher who has not the age and attainments presupposed in the possessor of a high-school diploma. There are differences in high schools, it is true, and a high-school diploma is not a fixed standard of attainment; but in these United States it is one of the most definite and uniform standards that we possess, and varies less than college degrees vary or than elementary schools and local standards of culture vary.

It is, of course, implied in the foregoing remarks that the high school from which the candidate comes is known to be a reputable school, and that its diploma is proof of the completion of a good four-years' course in a creditable manner. If these conditions do not exist, careful examination is the only recourse.

If this condition, high-school graduation or proof by examination of equivalent scholarship, be accepted, the questions of the age and attainment to be reached before entering upon professional study and training are already settled. But if a more definite statement be desired, then it may be said that the candidate for admission to a normal or training school should be eighteen years of age and should have studied English, mathematics, and science to the extent usually pursued in high schools, should be able to write readily, correctly, and methodically upon topics within the teacher's necessary range of thought and conversation, and should have studied, for two or more years, at least one language besides English. Skill in music and drawing is desirable, particularly ability to sketch readily and effectively.

Training schools.

The training of teachers may be done in normal schools, normal classes in academies and high schools, and in city training schools. To all these the general term "training schools" will be applied. Those instructed in these schools will be called pupils while engaged in professional study, and pupil-teachers or teachers-in-training while in practice-teaching preparatory to graduation. Teachers whose work is to be observed by pupil-teachers will be called model-teachers; teachers in charge of pupil-teachers during their practice work will be called critic-teachers. In some institutions model-teachers and critic-teachers are the same persons. The studies usually pursued in academies and high schools will be termed academic, and those post-academic studies to be pursued before or during practice-teaching as a preparation therefor will be termed professional.

Academic studies.

Whether academic studies have any legitimate place in a normal or training school is a question much debated. It cannot be supposed that your committee can settle in a paragraph a question upon which many essays have been written, many speeches delivered, and over which much controversy has been waged.

If training schools are to be distinguished from other secondary schools, they must do a work not done in other schools. So far as they teach common branches of study, they are doing what other schools are doing, and have small excuse for existence; but it may be granted that methods can practically be taught only as to subjects, that the study done in pro-

How to study is knowledge indispensable to knowing how to teach. The method of teaching can best be illustrated by teaching. The attitude of a pupil in a training school must be that of a learner whose mental stores are expanding, who faces the great world of knowledge with the purpose to survey a portion of it. If we insist upon a sufficient preparation for admission, the question of what studies to pursue, and especially the controversy between professional and academic work, will be mainly settled.

Professional work.

Professional training comprises two parts: (*a*) The science of teaching, and (*b*) the art of teaching.

In the *science of teaching* are included: (1) Psychology as a basis for principles and methods; (2) Methodology as a guide to instruction; (3) School economy, which adjusts the conditions of work; and (4) History of education, which gives breadth of view.

The *art of teaching* is best gained: (1) by observation of good teaching; (2) by practice-teaching under criticism.

Relative time.

The existence and importance of each of these elements in the training of teachers are generally acknowledged. Their order and proportionate treatment give rise to differences of opinion. Some would omit the practice work entirely, launching the young teacher upon independent work directly from her pupilage in theory. Others, and much the greater number, advise some preparation in the form of guided experience before the training be considered complete. These vary greatly in their estimate of the proportionate time to be given to practice during

training. The answers to the question "What proportion?" which your committee has received range from one-sixteenth to two-thirds as the proportion of time to be given to practice. The greater number, however, advocate a division of time about equal between theory and practice.

The normal schools incline to the smallest proportion for practice-teaching, the city training-schools to the largest. It should be borne in mind, however, that city training-schools are a close continuation, usually, of high schools, and that the high-school courses give a more uniform and probably a more adequate preparation than the students entering normal schools have usually had. Their facilities for practice-teaching are much greater than normal schools can secure, and for this reason also practice is made relatively more important. As to the relative merits of city training-schools and normal schools, your committee does not desire to express an opinion; the conditions of education demand the existence of both, and both are necessities of educational advancement. It is important to add, however, that in the judgment of your committee not less than half of the time spent under training by the apprentice-teacher should be given to observation and practice, and that this practice in its conditions should be as similar as possible to the work she will later be required to do independently.

Science of teaching—psychology.

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most fruitful when a foundation of antecedent knowledge has been provided. Hence your committee recommends that early in their course of study teachers in training assume as true the well-known facts of psychology and the essential principles of education, and make their later study and practice in the light of these principles. These principles thus become the norm of educational thought, and their truth is continually demonstrated by subsequent experience. From this time theory and practice should proceed together in mutual aid and support.

Most fundamental and important of the professional studies which ought to be pursued by one intending to teach is psychology. This study should be pursued at two periods of the training-school course, the beginning and the end, and its principles should be appealed to daily when not formally studied. The method of study should be both deductive and inductive. The terminology should be early learned from a suitable text-book, and significance given to the terms by introspection, observation, and analysis. Power of introspection should be gained, guidance in observation should be given, and confirmation of psychological principles should be sought on every hand. The habit of thinking analytically and psychologically should be formed by every teacher. At the close of the course a more profound and more completely inductive study of physiological psychology should be made. In this way, a tendency to investigate should be encouraged or created.

Study of children.

Modern educational thought emphasizes the opinion that the child, not the subject of study, is the guide to the teacher's efforts. To know the child is of para-

mount importance. How to know the child must be an important item of instruction to the teacher in training. The child must be studied as to his physical, mental, and moral condition. Is he in good health? Are his senses of sight and hearing normal, or in what degree abnormal? What is his temperament? Which of his faculties seem weak or dormant? Is he eye-minded or ear-minded? What are his powers of attention? What are his likes and dislikes? How far is his moral nature developed, and what are its tendencies? By what tests can the degree of difference between bright and dull children be estimated?

To study effectively and observingly these and similar questions respecting children is a high art. No common-sense power of discerning human nature is sufficient; though common sense and sympathy go a long way in such study. Weighing, measuring, elaborate investigation requiring apparatus and laboratory methods, are for experts, not teachers in training. Above all, it must ever be remembered that the child is to be studied as a personality and not as an object to be weighed or analyzed.

Methodology.

A part of the work under this head must be a study of the mental and moral effects of different methods of teaching and examination, the relative value of individual and class instruction at different periods of school life and in the study of different branches. The art of questioning is to be studied in its foundation principles and by the illustration of the best examples. Some review of the branches which are to be taught may be made, making the teacher's knowl-

of them ready and distinct as to the relations of

the several parts of the subject to one another and of the whole to kindred subjects. These and many such subjects should be discussed in the class in pedagogy, investigation should be begun, and the lines on which it can be followed should be distinctly laid down.

The laws of psychology, or the capabilities and methods of mind-activity, are themselves the fundamental laws of teaching, which is the act of exciting normal and profitable mind-action. Beyond these fundamental laws, the principles of education are to be derived inductively. These inductions when brought to test will be found to be rational inferences from psychological laws and thus founded upon and explained by them.

School economy.

School economy, though a factor of great importance in the teacher's training, can be best studied by the teacher of some maturity and experience, and is of more value in the equipment of secondary than of elementary teachers. Only its outlines and fundamental principles should be studied in the ordinary training-school.

History of education.

Breadth of mind consists in the power to view facts and opinions from the standpoints of others. It is this truth which makes the study of history in a full, appreciative way so influential in giving mental breadth. This general advantage the history of education has in still larger degree, because our interest in the views and experiences of those engaged like us in training the young enables us to enter more fully into their thoughts and purposes than we could into those of the warrior or ruler. From the efforts of the

man we imagine his surroundings, which we contrast with our own. To the abstract element of theoretical truth is added the warm human interest we feel in the hero, the generous partisan of truth. The history of education is particularly full of examples of noble purpose, advanced thought, and moral heroism. It is inspiring to fill our minds with these human ideals. We read in the success of the unpractical Pestalozzi the award made to self-sacrifice, sympathy, and enthusiasm expended in giving application to a vital truth.

But with enthusiasm for ideals history gives us caution, warns us against the moving of the pendulum, and gives us points of departure from which to measure progress. It gives us courage to attack difficult problems. It shows which the abiding problems are — those that can be solved only by waiting, and not tossed aside by a supreme effort. It shows us the progress of the race, the changing ideals of the perfect man, and the means by which men have sought to realize these ideals. We can from its study better answer the question, What is education, what may it accomplish, and how may its ideals be realized? It gives the evolution of the present and explains anomalies in our work. And yet the history of education is not a subject to be treated extensively in a training school. All but the outlines may better be reserved for later professional reading.

Training in teaching.

Training to teach requires (1) schools for observation, and (2) schools for practice.

Of necessity, these schools must be separate in purpose and in organization. A practice-school cannot be a model school. The pupil-teachers should have the opportunity to observe the best models of the

teaching art; and the manner, methods, and devices of the model-teacher should be noted, discussed, and referred to the foundation principles on which they rest. Allowable modifications of this observed work may be suggested by the pupil-teacher and approved by the teacher in charge.

There should be selected certain of the best teachers in regular school work, whom the pupil-teachers may be sent to observe. The pupil-teachers should take no part in the school work nor cause any change therein. They should, however, be told in advance by the teacher what purpose she seeks to accomplish. This excites expectation and brings into consciousness the apperceiving ideas by which the suggestions of the exercise, as they develop, may be seized and assimilated.

At first these visits should be made in company with their teacher of methods, and the work of a single class in one subject should be first observed. After such visits the teacher of methods in the given subject should discuss with the pupil-teachers the work observed. The pupil-teachers should first describe the work they have seen and specify the excellences noted, and tell why these thing are commendable and upon what laws of teaching they are based. Next, the pupil-teachers should question the teacher of methods as to the cause, purpose, or influence of things noted, and matters of doubtful propriety — if there be such — should be considered. Then the teacher in turn should question her pupil-teachers as to matters that seem to have escaped their notice, as to the motive of the model-teacher, as to the reason for the order of treatment, or form of question, wherein lay the merit of her method, the secret of her power. When pupil-teachers have made such observations several times, with several teachers, and in several

subjects, the broader investigation may be made as to the organization of one of the model rooms, its daily programme of recitations and of study, the methods of discipline, the relations between pupils and teacher, the "school spirit," the school movements, and class progress. This work should be done before teaching groups or classes of pupils is attempted, and should form an occasional exercise during the period of practice-teaching as a matter of relief and inspiration. If an artist requires the suggestive help of a good example that stirs his own originality, why should not a teacher?

The practice-school.

During the course in methodology certain steps preparatory to practice-teaching may be taken. 1. The pupil-teacher may analyze the topic to be taught, noting essentials and incidentals, seeking the connections of the subject with the mental possessions of the pupils to be considered and the sequences from these points of contact to the knowledge to be gained under instruction. 2. Next, plans of lessons may be prepared and series of questions for teaching the given subjects. 3. Giving lessons to fellow pupil-teachers leads to familiarity with the mechanism of class work, such as calling, directing, and dismissing classes, gives the beginner ease and self-confidence, leads to careful preparation of lessons, gives skill in asking questions, and in the use of apparatus.

The practice-teaching should be in another school, preferably in a different building, and should commence with group-teaching in a recitation-room apart from the schoolroom. Actual teaching of small groups of children gives opportunity for the study of the child-mind in its efforts at reception and assimilation of new ideas, and shows the modifications in lesson

plans that must be made to adapt the subject-matter to the child's tastes and activities. But the independent charge for a considerable time of a schoolroom with a full quota of pupils, the pupil-teacher and the children being much of the time the sole occupants of the room,— in short, the realization of ordinary school conditions, with the opportunity to go for advice to a friendly critic, is the most valuable practice; and no practice short of this can be considered of great value except as preparation for this chief form of preparatory practice. All this work should have its due proportion only, or evil may result. For example, lesson plans tend to formalism, to self-conceit, to work in few and narrow lines, to study of subjects rather than of pupils; lessons to fellow-pupils make one self-conscious, hinder the growth of enthusiasm in work, and are entirely barren if carried beyond a very few exercises; teaching groups of children for considerable time unfits the teacher for the double burden of discipline and instruction, to bear both of which simultaneously and easily is the teacher's greatest difficulty and most essential power.

A critic-teacher should be appointed to the oversight of two such pupil-teachers, each in charge of a schoolroom. The critic may also supervise one or more teachers practicing for brief periods daily with groups of children.

The pupil-teachers are now to emphasize practice rather than theory, to work under the direction of one who regards the interests of the children quite as much as those of the teacher-in-training. The critic must admit the principles of education and general methods taught by the teacher of methodology, but she may have her own devices and even special methods that need not be those of the teacher of methodology. No harm will come to the teachers-in-training

if they learn that principles must be assented to by all, but that methods may bear the stamp of the personality of the teacher; that all things must be considered from the point of view of their effect upon the pupils; the critic maintaining the claims of the children, the teacher of methods conforming to the laws of mind and the science of the subjects taught. The critics must teach for their pupil-teachers and show in action the justness of their suggestions. In this sense they are model-teachers as well as critics.

The critic should, at the close of school, meet her pupil-teachers for a report of their experiences through the day: What they have attempted, how they have tried to do it, why they did so, and what success they gained. Advice as to overcoming difficulties, encouragement under trial, caution if need be, help for the work of to-morrow, occupy the hour. Above all, the critic should be a true friend, a womanly and cultivated woman, and an inspiring companion, whose presence is helpful to work and improving to personality.

Length of training-school course.

There are three elements which determine the time to be spent in a training school — the time given to academic studies, the time given to professional studies, and the time given to practice. The sum of these periods will be the time required for the training course. Taking these in the inverse order, let us consider how much time is required for practice work with pupils. The time given to lesson outlines and practice with fellow pupil-teachers may be considered a part of the professional study rather than of practice-teaching. The period of practice with pupils must not be too short, whether we consider the interests of the pupils or of the teachers-in-training. An

effort is usually made to counteract the effect upon the children of a succession of crude efforts of teachers beginning practice by strengthening the teaching and supervision through the employment of a considerable number of model and supervisory teachers, and by dividing the pupils into small groups, so that much individual work can be done. These arrangements, while useful for their purpose, destroy to a considerable degree the usual conditions under which school work is to be done, and tend to render the teachers-in-training formal and imitative.

The practice room should be, as far as may be, the ordinary school, with the difficulties and responsibilities that will be met later. The responsibility for order, discipline, progress, records, reports, communication with parents and school authorities, must fall fully upon the young teacher, who has a friendly assistant to whom she can go for advice in the person of a wise and experienced critic, not constantly at hand, but constantly within reach.

Between the critic and the teacher-in-training there should exist the most cordial and familiar relations. These relations are based on the one hand upon an appreciation of wisdom and kindness, on the other, upon an appreciation of sincerity and effort. The growth of such relations, and the fruitage which follows their growth, require time. A half-year is not too long to be allotted for them. During this half-year experience, self-confidence and growth in power have been gained; but the pupil-teacher is still not ready to be set aside to work out her own destiny. At this point she is just ready for marked advance, which should be helped and guided. To remain longer with her critic friend may cause imitation rather than independence, may lead to contentment and cessation of growth. She should now be trans-

ferred to the care of a second critic of a different personality, but of equal merit. The new critic is bound by her duty and her ambition to see that the first half year's advancement is maintained in the second. The pupil-teacher finds that excellence is not all upon one model. The value of individuality impresses her. She gains a view of solid principles wrapped in diverse characteristics. Her own individuality rises to new importance, and the elements of a growth not at once to be checked start up within her. For the care of the second critic a second half year must be allowed, which extends the practice work with pupils through an entire school year. For the theoretical work a year is by general experience proven sufficient. The ideal training course is, then, one of two years' length.

Provision for the extended practice which is here recommended can be made only by city training-schools and by normal schools having connection with the schools of a city. To set apart a building of several rooms as a school of practice will answer the purpose only when there are very few teachers in training. In order to give each pupil-teacher a year of practice the number of practice rooms must equal the number of teachers to be graduated annually from the training-school, be the number ten, fifty, or five hundred. In any considerable city a school for practice will not suffice; many schools for practice must be secured. This can be done by selecting one excellent teacher in each of a sufficient number of school buildings, and making her a critic-teacher, giving her charge of two schoolrooms, in each of which is placed pupil- her for training.

"| i res that the training shall be done as y be under ordinary conditions, brings s at once into the general body of

teachers, makes the corps of critics a leaven of zeal, and good teaching scattered among the schools. This body of critics will uplift the schools. More capable in the beginning than the average teacher, led to professional study, ambitious for the best things, they make greater progress than they otherwise would do, and are sufficient in themselves to inspire the general body of teachers. For the sake of the pupil-teachers, and the children, too, this plan is best. Its economy also will readily be apparent. This plan has been tried for several years in the schools of Providence, with results fully equal to those herein claimed.

Tests of success.

The tests of success in practice-teaching are in the main those to be applied to all teaching. Do her pupils grow more honest, industrious, polite? Do they admire their teacher? Does she secure obedience and industry only while demanding it, or has she influence that reaches beyond her presence? Do her pupils think well and talk well? As to the teacher herself: Has she sympathy and tact, self-reliance and originality, breadth and intensity? Is she systematic, direct, and business-like? Is she courteous, neat in person and in work? Has she discernment of character and a just standard of requirement and attainment?

These are some of the questions one must answer before he pronounces any teacher a success or a failure.

Admission to a training school assumes that the pupil has good health, good scholarship, good sense, good ability, and devotion to the work of teaching. If all these continue to be exhibited in satisfactory degree and the pupil goes through the prescribed

to the improvement of his schools will labor earnestly to improve and especially to professionalize the teaching in his high school. The management which makes the high school an independent portion of the school system, merely attached and loftily superior, which limits the supervision and influence of the superintendent to the primary and grammar grades, is short-sighted and destructive.

There ought also to be a place and a plan for the training of teachers for normal schools. The great body of normal and training schools in the United States are secondary schools. Those who are to teach in these schools need broad scholarship, thorough understanding of educational problems, and trained experience. To put into these schools teachers whose scholarship is that of the secondary school and whose training is that of the elementary is to narrow and depress, rather than broaden and elevate.

If college graduates are put directly into teaching without special study and training, they will teach as they have been taught. The methods of college professors are not in all cases the best, and, if they were, high school pupils are not to be taught nor disciplined as college students are. High school teaching and discipline can be that neither of the grammar school nor of the college, but is *sui generis*. To recognize this truth and the special differences is vital to success. This recognition comes only from much experience at great loss and partial failure, or by happy intuition not usually to be expected, or by definite instruction and directed practice. Success in teaching depends upon conformity to principles, and these principles are not a part of the mental equipment of every educated person.

These considerations and others are the occasion of a growing conviction, widespread in this land, that

secondary teachers should be trained for their work even more carefully than elementary teachers are trained. This conviction is manifested in the efforts to secure normal schools adapted to training teachers for secondary schools, notably in Massachusetts and New York, and in the numerous professorships of pedagogy established in rapidly increasing numbers in our colleges and universities.

The training of teachers for secondary schools is in several essential respects the same as that for teachers of elementary schools. Both demand scholarship, theory, and practice. The degree of scholarship required for secondary teachers is by common consent fixed at a collegiate education. No one — with rare exceptions — should be employed to teach in a high school who has not this fundamental preparation.

It is not necessary to enter in detail into the work of theoretical instruction for secondary teachers. The able men at the head of institutions and departments designed for such work neither need nor desire advice upon this matter. And yet for the purposes of this report it may be allowable to point out a plan for the organization of a secondary training school.

Let it be supposed that two essentials have been found in one locality, (1) a college or university having a department of pedagogy and a department of post-graduate work; (2) a high school, academy, or preparatory school whose managers are willing to employ and pay a number of graduate students to teach under direction for a portion of each day. These two conditions being met, we will suppose that pedagogy is offered as an elective to the college seniors.

Two years of instruction in the science and art of teaching are to be provided; one, mostly theory with some practice, elective during the senior year; the

other, mostly practice with some theory, elective for one year as post-graduate work.

During the senior year is to be studied: —

The science of teaching.

The elements of this science are: —

I. Psychology in its physiological, apperceptive, and experimental features. The period of adolescence here assumes the prominence that childhood has in the psychological study preparatory to teaching in lower schools. This is the period of beginnings, the beginning of a more ambitious and generous life, a life having the future wrapped up in it; a transition period, of mental storm and stress, in which egoism gives way to altruism, romance has charm, and the social, moral, and religious feelings bud and bloom. To guide youth at this formative stage, in which an active fermentation occurs that may give wine or vinegar according to conditions, requires a deep and sympathetic nature, and that knowledge of the changing life which supplies guidance wise and adequate.

II. Methodology: A discussion of the principles of education and of the methods of teaching the studies of the secondary schools.

III. School economy should be studied in a much wider and more thorough way than is required for elementary teachers. The school systems of Germany, France, England, and the leading systems of the United States should also be studied.

IV. History of education, the tracing of modern doctrine back to its sources; those streams of influence now flowing and those that have disappeared in the sands of the centuries.

V. The philosophy of education as a division of an all-involving philosophy of life and thought in which unity is found.

The art of teaching.

This includes observation and practice. The observation should include the work of different grades and of different localities, with minute and searching comparison and reports upon special topics. How does excellent primary work differ from excellent grammar grade work? How do the standards of excellence differ between grammar grades and high school grades? Between high school and college work? What are the arguments for and against coeducation in secondary schools, as determined by experience? What are the upper and lower limits of secondary education as determined by the nature of the pupil's efforts?

In the college class in pedagogy much more than in the elementary normal school can the class itself be made to afford a means of practice to its members. Quizzes may be conducted by students upon the chapters of the books read or the lectures of the professors. These exercises may have for their object review, or improved statement, or enlarged inference and application, and they afford an ample opportunity to cultivate the art of questioning, skill in which is the teacher's most essential accomplishment.

The head of the department of pedagogy will, of course, present the essential methods of teaching, and the heads of other departments may lecture on methods pertaining to their subject of study; or secondary teachers of known success may still better present the methods now approved in the several departments of secondary work.

Post-graduate year.

To those graduates who have elected pedagogy in their senior year may be offered the opportunity of

further study in this department, with such other post-graduate work as taste and opportunity permit. From those selecting advanced work in pedagogy the board in charge of the affiliated secondary school should elect as many teachers for its school as are needed, employing them for two-thirds time at one-half the usual pay for teachers without experience. Under the professor of pedagogy of the college, the principal, and the heads of departments of the school these student-teachers should do their work, receiving advice, criticism, and illustration as occasion requires. The time for which they are employed would provide for two hours of class work and about one hour of clerical work or study while in charge of a school-room. These student-teachers should be given abundant opportunity for the charge of pupils while reciting or studying, at recess and dismissals, and should have all the responsibilities of members of the faculty of this school. Their work should be inspected as frequently as may be by the heads of the departments in which they teach, by the principal of the school, and by the professor of pedagogy. These appointments would be virtually fellowships with an opportunity for most profitable experience.

In the afternoon of each day these students should attend to college work and especially to instruction from the professor in pedagogy, who could meet them occasionally with the heads of the departments under whose direction they are working.

On Saturdays a seminary of two hours' duration might be held, conducted by the professor of pedagogy and attended by the student-teachers and the more ambitio teachers of experience in the vicinity. T se inaries would, doubtless, be of great profit of participants, and the greater to each other. (Such a training school for

secondary teachers in connection with Brown University and the Providence high school is contemplated for the coming year.)

It will not be needful to specify further the advantages to the student-teachers. The arrangement like wise affords advantage to the affiliated school, especially in the breadth of view this work would afford to the heads of departments, the intense desire it would beget in them for professional skill, the number of perplexing problems which it would force them to attempt the solution of.

The visits of the professor of pedagogy, and the constant comparison he would make between actual and ideal conditions, would lead him to seek the improvement, not only of the students in practice, but of the school as a whole.

When several earnest and capable people unite in a mutual effort to improve themselves and their work, all the essential conditions of progress are present.

HORACE S. TARBELL, Chairman,
Superintendent of Schools, Providence, R. I.
EDWARD BROOKS,
Superintendent of Schools, Philadelphia, Pa.
THOMAS M. BALLIET,
Superintendent of Schools, Springfield, Mass.
NEWTON C. DOUGHERTY,
Superintendent of Schools, Peoria, Ill.
OSCAR H. COOPER,
Superintendent of Schools, Galveston, Tex.

age and interest should be condensed into about twenty pages.

Cancellation, factoring, proportion, evolution, and involution should be retained. Cancellation and factoring should be strongly emphasized, owing to their immense value in shortening work in arithmetic, algebra, and in more advanced subjects. Some drill in the Metric System should not be omitted.

3. As to MENTAL ARITHMETIC: Till the end of the fourth year the pupil does not need a text-book of mental arithmetic. So far his work in arithmetic should be about equally divided between written and mental. At the beginning of the fifth year, in addition to his written arithmetic, he should begin a mental arithmetic and continue it three years, reciting at least four mental arithmetic lessons each week. The length of the recitation should be twenty minutes. A pupil well drilled in mental arithmetic at the end of the seventh year, if the school age begins at six, is far better prepared to study algebra than the one who has not had such a drill. There are a few problems in arithmetic that can be solved more easily by algebra than by the ordinary processes of arithmetic, but there are many numerical problems in equations of the first degree that can be more easily handled by mental arithmetic than by algebra. To attack arithmetical problems by algebra is very much like using a tremendous lever to lift a feather. Those who have found a great stumbling-block in arithmetical "conundrums" have, if the inside facts were known, been looking in the wrong direction. A deficiency of "number-brain-cells" will afford an adequate explanation.

4. REARRANGEMENT OF SUBJECTS: There should be a rearrangement of the topics in arithmetic so that one subject naturally leads up to the next. As an illustration, it is easily seen that whole numbers and fractions can be treated together, and that with U. S. money, when the dime is reached, is the proper time to begin decimals, and that when a "square" in surface measure first comes up, the next step is the square of a number as well as its square root, and that solid measure logically lands the learner among cubes and cube-roots. When he learns that 1728 cubic inches make one cubic foot he is prepared to find the edge of the cube. What is meant here is pointing the way to the next above. All depends upon the teacher's ability to lead the pupil to see conditions and relations. My contention is that truth, so far as one is capable of taking hold of it when it is properly presented, is always a simple affair.

5. As to algebra: If algebra be commenced at the middle of the seventh year, let the pupil go at it in earnest, and keep at it till he has mastered it. Here the best opportunities will be afforded him to connect his algebraic knowledge to his arithmetical knowledge. He builds the one on top of the other. The skillful teacher always insists that the learner shall establish and maintain this relationship between the two subjects. To switch around the other way appears to me to be the same as to omit certain exercises in the common algebra, because they are more briefly and elegantly treated in the calculus. It is admitted that a higher branch of mathematics often throws much light on the lower branches, but these side-lights should be employed for the purpose of leading the learner onward to broader generalizations. Unless one sees the lower clearly, the higher is obscure. Build solidly the foundation on arithmetic — written and mental — and the higher branches will be more easily mastered and time saved.

History of the United States.

In teaching this branch in the public schools, there does not appear, so far as I can see, any substantial reason why the pupils should not study and recite the history of the Rebellion in the same manner that they do the Revolutionary War. The pupils discuss the late war and the causes that led to it with an impartiality of feeling that speaks more for their good sense and clear judgment than any other way by which their knowledge can be tested. They may not get hold of all the causes involved in that conflict, but they get enough to understand the motives which caused the armies to fight so heroically, and why the people, both North and South, staked everything on the issue. Just as the men who faced each other for four years and met so often in a death grapple will sit down now and quietly talk over their trials, sufferings, and conflicts, so do their children talk over these same stirring scenes. They, too, so far as my experience extends, are singularly free from bitterness and prejudice. It is certainly a period of history that they should study.

The spelling-book.

In addition to the "spelling-lists," I would supplement with a good spelling-book. So far, no "word-list," however well selected, has supplied the place of a spelling-book. All those schools

that threw out the spelling-book and undertook to teach spelling incidentally or by word-lists failed, and for the same reason that grammar, arithmetic, geography, and other branches cannot be taught incidentally as the pupil or the class reads Robinson Crusoe, or any similar work. It is an independent study and as such should be pursued.

BY CHARLES B. GILBERT, OF ST. PAUL.

While affixing my signature to the report of this Committee, as expressing substantial agreement with most of its leading propositions, I beg leave also to indicate my dissent from certain of its recommendations and to suggest certain additions which, in my judgment, the report requires.

1. There are other forms of true correlation which should be included with the four mentioned in the first part of the report and which should be as clearly and fully treated as are these four.

The first is that form of correlation which is popularly understood by the name, and which is also called by some writers concentration, co-ordination, unification, and alludes in general to a division of studies into content and form; by content meaning that upon which it is fitting that the mind of the child should dwell, and by form the means or modes of expression by which thoughts are communicated. Or, it may be thus expressed: The true content of education is (1), philosophy or the knowledge of man as to his motives and hidden springs of action indicated in history and literature, and (2) science, the knowledge of nature, and its manifestations and laws. Its form is art, which is the deliberate, purposeful, and effective expression to others of that which has been produced within man by contact with other men and with nature, and is commonly referred to as divided into various arts, such as reading, writing, drawing, making, and modeling. The relation of content and form is that of principle and subordinate, the latter receiving its chief value from the former. In a true education they are so presented to the mind of the child that he instinctively and unconsciously grasps this relation and is thereby lifted into a higher plane of thinking and living than if the various arts are taught, as they too commonly are, without reference to a noble content. This relation of form to content is vgauely referred to in the report, but nowhere definitely

treated. It seems to me that it is a true form of correlation, and, as such, deserves special and definite treatment. Moreover, it is at present much in the minds of the teachers of this country, often in forms that are misleading and harmful. The fact that it adds the important element of interest to the dry details of common school life makes it especially attractive to progressive and earnest teachers, and this Committee should recognize its importance and make such an utterance upon it as will guide the average teacher to a clear comprehension of its meaning and to a wise use of it in the schoolroom.

Second, there is a still higher form of correlation which is definitely referred to later in the report as that "of the several branches of human learning in the unity of the spiritual view furnished by religion to our civilization." This in the report is assigned absolutely to the province of higher education. While I do not wish to dissent wholly from this view, since it is doubtless true that this higher unity cannot be comprehensively stated for the use of a child, yet a wise teacher can so present subjects to even a young child that a sense of the unity of all knowledge will, to a certain degree, be unconsciously developed in his mind. In regard to certain of the great divisions of human knowledge, this relation is so evident that they cannot be properly presented at all unless the relation be made clear. Such studies are history and geography.

2. The recommendations upon the subject of language should be broadened to cover the production of good English by the child himself, with the suggestion of suitable topics and proper methods. This report confines itself to the absorptive side of education and ignores that development of power over nature, man, and self, which comes from free exercise of faculties and free expression of thought. The study of language as something for the child to use himself, the great means by which he is to assert his place in civilization, and exert his influence for good, is nowhere referred to except in the vaguest way. This statement in regard to language applies almost equally well to drawing, and here is made evident the importance of the form of correlation to which I have just referred. The proper material for the training of the child in expression is that which is furnished by the study of man and nature. His mind being filled with high themes, he asserts his individuality, expresses himself in regard to them, and thereby gains at once both a closer and clearer comprehension of what he has

studied, and also the power by which he may become a factor in his generation.

3. I would wish to omit the word "weekly" where it occurs in the discussion of the subjects of general history and science, unless it be understood to mean that an amount of time in the school year equivalent to sixty minutes weekly be given to each of these subjects. It is often better to condense these studies into certain portions of the year, giving more time to them each week, and using them as the basis, to a certain degree, of language work. I believe that, especially with young children, clearer concepts are produced by such connected study, pursued for fewer weeks, than by lessons seven days apart.

4. In my judgment manual training should not be limited to the seventh and eighth grades, but should begin in the kindergarten with the simple study of form from objects and the reproduction in paper of the objects presented, and should extend, in a series of carefully graded lessons, through all the grades, leaving, however, the heavier tools, such as the plane, for the seventh and eighth grades. By these means an interest is kept up in the various human industries, sympathy for all labor is created, and a certain degree of skill is developed; moreover, the interest of the pupils in their school is greatly enhanced. Manual training has often proved the magnet by which boys at the restless age have been kept in school instead of leaving for some gainful occupation.

5. I desire to suggest that geometry may be so taught as to be a better mathematical study than algebra to succeed or accompany arithmetic in the seventh and eighth grades. I do not refer particularly to inventional geometry, to which the Committee accords a slighting attention, but to constructive geometry and the simplest propositions in demonstrative geometry, thus involving the comprehension of the elementary geometric forms and their more obvious relations. This study may be made of special interest in connection with manual training and drawing, while it presents fewer difficulties to the immature mind than the abstractions of algebra, since it connects more directly with the concrete, by which its presentation may often be aided.

6. While agreeing fully with the majority of the Committee that the full scientific method should not be applied to the study of elementary science by young children, yet I am compelled to

favor more of experimentation and observation by the child, and less of telling by the teacher than the report would seem to favor.

7. I would go farther than the majority of the Committee, and insist that, except in rare cases, there should be no specialization of the teaching force below the high school, and that even in the first years of the high school, so far as possible, specialization should be subordinated to a general care of the child's welfare and oversight of his methods of study, which are impossible when a corps of teachers give instruction, each in one subject, and see the student only during the hour of recitation.

8. While in the main I agree with the bald statements under the head "Correlation by synthesis of studies," since reference is made to only a very artificial mode of synthesis not at all in vogue in this country, I must dissent emphatically from this portion of the report as by inference condemning a most important department of correlation, to which I have referred earlier. The doctrine of concentration is not necessarily artificial; rather it refers to the higher unity, of which this Committee has spoken in glowing terms as belonging to the province of higher education. It also includes the division of the school curriculum into content and form, which this Committee inferentially adopts in its treatment of language. I do not believe, any more than do the majority of the Committee, that the entire course of study can be literally and exactly centred about a single subject, nor do I believe in any artificial correlation; but there is a natural relation of all knowledges, which this Committee admits in various places, and which is the basis of a proper synthesis of studies, according to the psychological principle of apperception.

9. If by the term "oral," as applied to lessons in biography and in natural science, the Committee means, as the word would imply, that the instruction is to be given in the form of lectures by the teacher, I cannot in full agree with the Committee's conclusions. As I have already stated, in natural science the work should be largely that of observation, and in history and biography, while in the very lowest grades the teachers should tell the children stories, as soon as it is possible the desired information should be obtained by the student through reading. To this end the reading lesson in school should be properly correlated with his other studies, and he should be

advised as to his home reading. The information thus obtained should be the subject of conversation in the class, and should furnish the material for much of the written language work of the children.

10. I must dissent emphatically and entirely from that portion of the report which recommends that a text-book in grammar be introduced into the fifth year of the child's school life. It is a question in my mind whether it would not be better if the text-book were not introduced into the grades below the high school at all. Certainly it should not appear before the seventh year. Such knowledge of grammar as will familiarize the child with the structure of the sentence, the basis of all language and as will enable him to use correctly forms of speech which the necessities of expression require, should be given orally by the teacher in connection with the child's written work, when needed; but against the introduction of a text-book upon grammar, the most abstruse of all the subjects of the school curriculum, when the pupil is not more than ten years old, I must protest. Instead of that, the child should devote much time, some every day, to writing upon proper themes in the best English he can command, furnishing occasion to the teacher to correct such errors as he may make, and acquiring by use acquaintance with the correct forms of grammar. If, as will doubtless be the case in most cities, local conditions render the introduction of Latin into the eighth grade inadvisable, this study of grammar may be made in that grade somewhat more intensive.

11. If by a text-book in geography is meant that which is commonly understood by the term, and not simply geographical reading matter, in my judgment, it should not be introduced earlier than the fifth year.

These suggestions and expressions of dissent, if approved by the Committee, would necessitate some change in the programme submitted, the most important of which would be the making room for the production of English in the grades. This could be provided in the first and second grades by taking some of the time devoted to penmanship and doing the work partly in connection with the reading classes. In the third and fourth grades it should take some of the time devoted to penmanship and should be studied also in connection with geography and reading, and in the fifth and sixth grades it should take all of the time given to grammar.

I regret to be compelled to express dissent upon so many

points, but as most of them appear to me vital and as the differences appear to be not merely superficial but fundamental, affecting and affected by one's entire educational creed, I cannot do otherwise. To most of the report I most gladly give my assent and approval.

BY L. H. JONES, OF CLEVELAND.

I agree most heartily with the main features of the foregoing report of the sub-committee on correlation of studies. It is so admirable in its analysis of subjects and in its statement of comparative education values, and so suggestive in its practical applications to teaching, that I regret to find myself appearing in any way to dissent from its conclusions. Indeed, my principal objection is not against anything contained in the report (unless it be against a possible inference which might be drawn at one point), but it refers rather to what seems to me to be an omission.

In addition to all the forms of correlation recommended in the report, it seems to me possible to make a correlation of subjects in a programme in such way that the selection of subject-matter may be to some extent from all fields of knowledge. These selections should be such as are related to one another so as to be mutually helpful in acquisition. They should be the main features of knowledge in the different departments.

These different departments from which the chosen subjects should be taken must be fundamental ones and must be sufficiently numerous to represent universal culture. The report itself indicates conclusively what these are.

Reference is made in the report to various attempts that have been made to correlate subjects of study.

A very just criticism is made upon that attempt at correlation by the use of the story of Robinson Crusoe as a centre of correlation. It is distinctly pointed out in the report that the experiences of Robinson Crusoe are lacking in many of the elements of universal culture, and in many elements of education needed to adjust the individual properly to the civilization of our time and country. It is equally evident that the attempt to make this story the centre of correlation leads directly to trivial exercises in other subjects in order to make them "correlate" with Robinson Crusoe. It is also shown in the report that it naturally leads to fragmentary knowledge of many subjects very much inferior to that clear, logically connected knowledge of a

subject which may be had by pursuing it without reference to correlating it with all others.

It is at this point that in my judgment a wrong inference is permitted by the report.

It does not, as it seems to me, follow that, because correlation based on Robinson Crusoe is a failure, all correlations having the same general purpose will necessarily prove failures. For my own part, I do not believe that correlation needs any "centre," outside the child and its natural activities. If, however, it seems wiser to give special prominence to any given field of acquisition, it should, in my judgment, be accorded to language and its closely related subjects---reading, spelling, writing, composing, study of literature, etc., etc. Indeed, language as a mode of expression is organically related to thinking, in all fields of knowledge, as form is related to content. A "system" or "programme" of correlation on this basis would seek for fundamental ideas in all the leading branches and make them themes of thought and occasions of language exercises. The selections would omit all trivialities in all subjects, and would not attempt to correlate for the mere sake of correlation; but would seek to correlate wherever by such correlation kindred themes may be made to illuminate one another. To illustrate, concrete problems in arithmetic would be sought that would clearly develop and illustrate mathematical ideas and their application; but in a secondary way these problems would be sought for in the various departments of concrete knowledge---geography, history, physics, chemistry, astronomy, meteorology, political, industrial, or domestic economy. But none of these themes would be so relied upon for problems as to compel one to choose unreasonable or trivial relations on which to base them. The problems themselves should represent true and important facts and relations of the other subjects as surely and rigidly as they should involve correct mathematical principles; and all such exercises should be rightly related to the child's education in language.

In like manner, when a child is engaged in nature study of any kind, some valuable problems in mathematics may be found rightly related both to the subject directly in hand and the child's natural progress in arithmetic. Also many of the lessons in nature study are directly related to some of the finest literature ever produced, in which analogies of nature are made the means of expression for the finest and most delicate of the human

experiences. When the child has mastered the physical facts on which the literary inspiration is based is the true time to give him the advantage of the study of such literature. These ideas are not only rightly related to one another, but to the mind itself. It is, so to speak, the nascent moment when the mind can easily and fully master what might else remain an impenetrable mystery; and all because subjects and occasion have come into happy conjunction.

This is not the place in which to attempt any elaboration of such a system of correlation. But I feel that its absence from the report may make many persons feel that the latter is so far incomplete.

BY WILLIAM H. MAXWELL, OF BROOKLYN.

With the main lines of thought in this report I find myself in agreement. With many of its details, however, I am not in accord. I regret to have to express my dissent from its conclusions in the following particulars: —

1. The report makes too little of the uses of grammar as supplying canons of criticism which enable the pupil to correct his own English, and as furnishing a key (grammatical analysis) that gives him the power to see the meaning of obscure or involved sentences.

2. For the study of literature, complete works are to be preferred to the selections found in school readers.

3. That species of language exercise known as paraphrasing I regard as harmful.

4. The study of number should not be omitted from the first year in school. Practice in the primary operations of arithmetic should not be omitted from the seventh and eighth years. The quadratic equation should be reserved for the high school.

5. The foreign language introduced into the elementary school course should be a modern language — French or German. Latin should be reserved for those who have time and opportunity to master its literature.

6. In the general programme of studies, the school day is cut up into too many short periods. The tendency of such a programme as that in the text would be to destroy repose of mind and render reflection almost an impossibility.

7. I desire to express my agreement with the opinions stated in Sections 2, 3, 6, and 9 of Mr. Gilbert's dissenting opinion; and, in the main, with what Mr. Jones says on the correlation of studies.

Dissent from Dr. Draper's Report.

BY EDWIN P. SEAVER, BOSTON.

I find myself in general accord with the doctrines of the report. There is only one feature of it from which I feel obliged to dissent, and that is an important though not necessarily a vital one. I refer to the office of school director. I see no need of such an officer elected by the people, and I do see the danger of his becoming a part of the political organization for the dispensation of patronage.

All power and authority in school affairs should reside ultimately in the board of education, consisting of not more than eight persons appointed by the mayor of the city, to hold office four years, two members retiring annually and eligible for reappointment once and no more. This board should appoint as its chief officer a superintendent of instruction, whose tenure should be during good behavior and efficiency, and whose powers and duties should be to a large extent defined by statute law, and not wholly or chiefly by the regulations of the board of education. The superintendent of instruction should have a seat and voice but not a vote in the board of education. The board of education should also appoint a business agent, and define his powers and duties in relation to all matters of buildings, repairs, and supplies, substantially as set forth in the report in relation to the school director.

All teachers should be appointed and annually reappointed or recommended by the superintendent of instruction, until after a sufficient probation they are appointed on a tenure during good behavior and efficiency.

All matters relating to courses of study, text-books, and examinations should be left to the superintendent and his assistants, constituting a body of professional experts who should be regarded as alone competent to deal with such matters, and be held accountable therefor to the board of education in a general way, and not in particular details.

BY ALBERT G. LANE, CHICAGO.

I concur in the recommendations of the sub-committee on the Organization of City School Systems as summarized in the concluding portion of the report, omitting in item THIRD the words, "And that it be constituted of two branches acting against each other." Omit FIFTH, "But we think it preferable that he be chosen in the same way that members of the board are chosen and be given veto power upon the acts of the board." I recommend that the veto power be given to the president of the board.

Discussion on Report of Dr. Harris.

FRANK M. MCMURRY, *Franklin School, Buffalo:* My remarks have no reference to the dissenting opinions, but will be confined to the correlation in the main body of the report. So far, we have listened to the definition of correlation; my remarks refer to that, and to its influence on the course of study.

The address by Miss Arnold last night referred to correlation. That lecture is not in accord with the report of five in regard to this subject. We have been using two synonyms for correlation — coördination and concentration. Many persons have gotten their definition through their ideas of concentration. People have in mind, as I understand it, mainly the relation of studies to one another. Let me give one or two samples in addition to last night's suggestions. Let me refer to Egypt. The geography will naturally take the Nile, the drawing will take up cardboard work, etc., the pupil will deal with the pyramid and the triangle in mathematics, and with language work in the whole subject. I give that as a simple illustration of concentration.

I turn to the part of the report where they take up correlation by synthesis of studies; that, as I understand it, was the thought in the mind of Miss Arnold, and it is what is in my own mind. They take up the subject of Robinson Crusoe. I think they should look into it further, but it is not my purpose to defend Robinson Crusoe. They have taken the story of Robinson Crusoe as a type and they have condemned that as a type. We may think they aim mainly at the story of Robinson Crusoe alone, but they say, "Your committee would call attention in this connection to the importance of the pedagogical principle of analysis and isolation as preceding synthesis and correlation. There should be rigid isolation of the elements of each branch for the purpose of getting a clear perception of what is individual and peculiar in a special province of learning."

They warn us against having studies closely tied together. They do not realize, as it seems to me, that the chief fault of our present studies is that they do not support each other. The report is opposed from principle to this kind of correlation. They refer later

to this matter in these words: "Your committee has already mentioned a species of faulty correlation wherein the attempt is made to study all the branches in each, misapplying Jacotot's maxim, 'all is in all.'" Further than that, they show a large lack of sympathy with this point. They have no allusion to the fact that the different sciences have a relationship with one another. By their omissions, as well as their positive statements, they show their opposing attitude toward correlation.

They talk about having a proper sequence in the studies,— they do not insist upon it from principle. They say, "The most practical knowledge of all, it will be admitted, is a knowledge of human nature,— a knowledge that enables one to combine with his fellow-men and to share with them the physical and spiritual wealth of the race. Of this high character as humanizing or civilizing are the favorite works of literature found in the school readers, about one hundred and fifty English and American writers being drawn upon for the material." In other words, they are in sympathy with the text-book readers. In enforcing that point further, "In the first three years the reading should be limited to pieces in the colloquial style, but selections from the classics of the language in prose and poetry shall be read to the pupil from time to time." "In the years from the fifth to the eighth there should be some reading of entire stories, such as Gulliver's Travels, Robinson Crusoe," and so forth.

As I understand it, we should have wholes in literature from the beginning. There are sixty pages in this report, only two of them refer to the subject of concentration, and they condemn that subject from principle. They show that they do not, from principle, favor the idea of connected thought. That is my first point — opposition to the whole matter. [Applause.]

The next point is, What do they discuss? [Laughter.] They have four points in their definition of correlation. The fourth point is the chief subject. "Your committee understands by correlation of studies the selection and arrangement in order of sequence of such objects of study as shall give the child an insight into the world that he lives in, and a command over his resources such as is obtained by healthful coöperation with one's fellows. In a word, the chief consideration to which all others are to be subordinated, in the opinion of your committee, is this requirement of the civilization into which the child is born as determining what he shall study in school." There is the old idea of study, in which, from the adult standpoint, we decide that what the child will use as a man shall constitute his course. We have had the three R's and

we have tended to kill the children. The new education is based on child study, apperception, and interest. We have reached the conclusion that knowledge is not primarily for the sake of knowledge, but for use, and the only condition under which the ideas will be active is that they shall appeal to the child and shall fit his nature. Child study, interest, and apperception demand that the chief factor shall be the nature of the child — that is not the attitude of this committee of five. "Your committee is of the opinion that psychology of both kinds, physiological and introspective, can hold only a subordinate place in the settlement of questions relating to the correlation of studies. The branches to be studied and the extent to which they are studied will be determined mainly by the demands of one's civilization." Psychology, in a plain statement, "will largely determine the methods of instruction, the order of taking up the several topics so as to adapt the school work to the growth of the pupil's capacity." In other words, the committee have failed to be influenced as to a course of study by other considerations than the demands of civilization. They state plainly that psychology shall be a subordinate matter in determining curriculum. The fact is to be seen in their course of study. Reading, nature study, and history are the principal subjects, but in the minds of the committee the principal subjects are reading, writing, etc., for the first three years. I do not believe it. In the first three years, reading pieces; in other words, the first three years do not deal primarily in rich ideas. One objection to Robinson Crusoe — "It omits cities, governments, the world commerce, the international process, the church, the newspaper, and book from view." They are not in sympathy with the child. I would choose Robinson Crusoe because it does not deal with subjects which are outside the child's interest.

F. W. PARKER, *Cook County Normal, Chicago:* When I moved, two years ago, the appointment of this committee, I had in mind the careful study of the whole matter of correlation that teachers in this country should get from the highest sources the doctrine and the highest criticism, — that a report should be presented which should follow the greatest report upon education in this century, — the report of the Committee of Ten. I have not had time to study this report and can, therefore, say very little upon it. These subjects should be studied with the greatest care. It seems to me that there are some general criticisms which may be made in the brief time at my command.

We cannot doubt that these gentlemen have made the most careful study of the doctrine of Herbart and of his disciples,— Ziller, Stoy, and Rein; they have also had their eye upon the distinguished students of this doctrine in this country. The failure of this report is that they haven't even given us the fundamental doctrine of Herbert. There is no doubt that the Herbartian doctrine and all other doctrines of concentration are ignored in their fundamental essentials. That is what this committee has left out — it is the old story, the play of Hamlet with Hamlet left out, or to put it a little more mildly, Hamlet kicked out. It seems that this doctrine is the only doctrine which furnishes a grand working hypothesis to the teachers of the world. It should be examined most carefully, and what cannot bear the closest criticism should be rejected. The five, with the dissent of the Western men, have not deemed it worthy of this attention and have rejected it *in toto*.

Poor old Robinson Crusoe bears the brunt, notwithstanding our esteemed friends of the Normal University, who wish to interest the children in something. Sometimes we go into schools where there is not much interest, especially in spelling and grammar. I leave the defense of Robinson Crusoe to Mr. McMurry.

The other reference is to language. "It is not wise to stop a child to correct his mistakes in grammar"! "The development of language cannot be organically related to the development of thought"! It is one of the fundamental principles, if I understand it, that the development of thought should have as a necessity the evolution of language. This, says the report, cannot be done; grammar must be developed by itself and language by itself. If I am incorrect, I beg to be excused. I can only refer to a few features of this report in the tabulated programme. A course of study is absolutely necessary, but it should be marked "for this day only." We take the subject of reading twice every day for the first two years, once a day for the next six years. Reading is thinking, it should be educated thinking. We cannot do thinking without the subjects to be learned — as geography and science. Science, according to the programme, is to be taught by oral lessons. The world is round, but children cannot reason. Would it not be well to go into the laboratory to see whether the children cannot reason The child, by force of his nature, must reason — must find out these things. I am quoting from John Dewey. But we are told in this report that the subject of science, at least a few things in these subjects, must be told him first. I never knew a case of the kind, but it may be.

Now, I would say to this committee of five, have your reading

the best literature,—there should be nothing but literature. Should we not have literature from the beginning? is the question we are asking. It seems to be the case that this report leaves very little to ask. The child spends all his time in reading — reading what? Can the child learn to get thought in reading? Some of us think he can. Is it not well to follow here the scientific method and find out whether the child can learn to read beautifully and well? The same of writing. I see the millions bowed down for years to the copy books. Is there no way out? Is there no relief? Is it possible for the child to learn to write as he learns to talk, or must he be bound to the desk? [Time.]

I would simply say that this report should be entitled to the greatest respect. I shall go home and study it carefully and prayerfully. I move that a committee of fifteen be appointed to revise this report. [Great applause.]

PRESIDENT CHARLES DE GARMO, *Swarthmore College, Pennsylvania:* Fellow-teachers: Those who are to discuss this question this morning are placed under a great embarrassment. The report should have been distributed before this meeting. That it has not been, I learn is not the fault of the officers of the department. [Applause.]

We might infer from what we have heard that the report is valueless. This is by no means the case. It is an estimate of educational values. Under the subject of language, I quote, "A survey of its educational value, subjective and objective, usually produces the conviction that it is to retain the first place." Under arithmetic, "Side by side with language study is the study of mathematics in the school, claiming the second place in importance." Under geography, "The educational value of geography, as it is and has been in elementary schools, is obviously very great. The educational value of geography is even more apparent if we admit the claims of those who argue that the present epoch is the beginning of an era." As a critique of educational values the report is a very important one. I would like to call your attention to the correlation of the pupil to his environment. That, I think, is an important matter. They have departed, at least in principle, from that old formal discipline alone; this individual to be fitted for life must master his environment. The committee have examined the various studies as to their value, and that, I think, is a grand thing. I cannot see at all that it is a correlation of studies. It has been said in your hearing that the throwing of light by studies on each other was disregarded. The report presents a

very different idea of the correlation of studies. The second address of last evening — by Miss Arnold — has been referred to as an illustration of bringing the studies together so that one throws light upon another. I think the idea that there is no need of reform will be reinforced by this report; that the report will have a reactionary effect upon those who think that way. The committee have denied that we need any reform, or have implied that we have the reform already. It seems that the name given to this report should be taken off and the heading "An essay on educational values" substituted instead. It is true that this committee have, at the beginning, laid down a principle that would make a correlation. The text is here, but the discussion is lacking. So far as I have read, I have found but little in the report which shows what the sequence of studies should be. There is a hint in arithmetic where it says, "Common fractions should come before decimals." Is this attempt at the correlation of studies anything more than a series of tunnels through the educational fields with switch connections, so that if we start in at one end we are switched to this or that without any view of the whole journey? We may light these tunnels with electricity, perhaps, but, after all, we are spending eight years underground, switching from one tunnel to another. Now the other alternative is to go out into the world, out into the sunshine, and follow highways so clear that a child can examine all that is about them. It is possible to relate one subject to the other so that when it is dark the child, even if he has not the sun to lighten his eyes, can at least have some stars of hope above him.

PRESIDENT OF THE DEPARTMENT: From the course the discussion has taken, it has seemed to me that Dr. Harris should say a word at this point and read some additional parts of the report.

W. T. HARRIS, *Commissioner of Education:* I must set myself right on Herbart. The report does not allude to Herbart anywhere except in respectful terms. The criticism of the use of Robinson Crusoe does not attribute its mistakes to the Herbartians. Perhaps they would not recognize it as a true statement of their method. To make Herbart of use in pedagogy we must to some extent ignore his philosophy. His usefulness in education is proportioned to his uselessness as a philosopher. What can we do with a philosopher who omits the will from the three departments of the mind and retains only intellect and feeling? Herbart was obliged to explain how man comes to act without the will. He ex-

plains that desire can be aroused by interest in such a way that action will follow. With this great defect, however, Herbart is valuable in education. His doctrine of apperception does not need any correction. His doctrine of interest, however, needs some limitation, because the idea of the will and the idea of duty are omitted from his system. He must make up by the idea of desire and the idea of interest. I am surprised that the claim is made here that the report does not treat the subject assigned to it. Correlation of studies is assumed to mean concentration of studies. There is no such definition to the word "correlation" in any dictionary; only four or five obscure books in the English language give the word correlation the meaning of concentration. I was told of this sense of the word correlation, but did not believe for a moment that it had been the intention of the department of superintendents, in appointing a committee on this subject, to have a report on the Herbartian idea of concentration.

CHARLES MCMURRY, *State Normal University, Normal, Ill.:* In one of your statements read: "Your committee would call attention in this connection to the importance of the pedagogical principle of analysis and isolation as preceding synthesis and correlation." Now, as I understand it, this is what this committee has attempted to report. Now, he says that this precedes synthesis or correlation. I would like to know if there is any dictionary or number of dictionaries to make correlation mean what this says — the analysis and isolation of subjects of study.

I have been very much afraid that Dr. Harris would take refuge in the discussion of the subject of the will in which he distinguishes Herbart from others. The exclusion of the will is held as far as Herbart is concerned of moral education. Now I wish to say that Herbart has laid down more and better educational principles than any other philosopher.

The more difficult thing is not exactly the best thing for the child in the first and second grades. There was an old theory among the Latins that if the child could be made to go through the difficulties of a Latin speech, it would prepare him for the difficult things to follow. Now, we wish to have life and not dead formalism. I believe that a thoughtful study of this report will convince any one who is interested in children that it is formal, and is a production of this old idea, based upon language as the foundation of all education.

PRESIDENT W. H. HERVEY, *Teachers' College, New York:* I

find myself drawn in two directions on this question. I fain would cleave to everything that has been said this morning as containing the truth. I believe that, so far as this report and these remarks confine themselves to educational principles, any one of us may agree most heartily. Only where they descend to particular applications are we at variance. We always are at variance when we descend from the clouds, but that is no objection to the clouds. Now, I take it there are arrayed before us the two opposing camps,—the Hegelian and the Herbartian. What does the Hegelian say? In order that you may know the world you must turn your back upon yourself and lose yourself; you lose your life that you may save it. You leave your home plate, go to the second base, then to the third base, and you make a home run. That is a true type of all development. What, on the other hand, is the standpoint of the Herbartian? What we know depends upon what we have known. And that is true. And what we can do, according to this philosophy, depends upon the interest, the kinetic energy. About this matter of will, we have the Calvinistic theology set over against the Unitarian. Hegel's Lord was a man of war. Herbart brings us to view the New Jerusalem. He shows us the church, not militant, but triumphant. Herbart distinguishes the good from the evil, and makes it impossible for a man to do a wrong deed or to think a wrong thought, and that, I take it, is even a higher attainment than the Hegelian philosophy has thought of. Any one who develops the will by the man-of-war idea will have a sorry will upon his hands. There is, with the young child, certainly, a synthesis, a correlation, a development of taste where the analysis is suppressed and unconscious; and yet, my friends, if you attempt to educate a boy in the upper grammar grades or the high school according to the same principles as the primary grades, you make a sorry mess of it. If we would pass from the state of the child to the state of the man, it is necessary for us to go through the dry bones of analysis.

DR. B. A. HINSDALE, *University of Michigan, Ann Arbor:* There are two things which I wish very briefly to touch. First, I do not understand Dr. Harris, in speaking of Herbart and the will, to leave the subject in the form in which Dr. McMurry understood that matter. I understand that Herbart does not base morals upon the will, but rather upon the feeling and the desires. Now, whether the will or the desires furnish a proper basis is a question I do not wish to discuss. Certainly, when any one says that the Doctor declared that Herbart does not take the question of morals into ac-

surface relations which will be discarded as soon as we pass above the primary grades. While we may concede that this is possible in one exercise, it is not possible in higher instruction. Our methods change, so let us not be too sweeping, too confident in our terms. Farther, I think that Dr. Harris is entirely right in the position he has taken as to the meaning of coördination or correlation. He uses the term correlation, not only in its scientific, but in its recognized pedagogic sense. Concentration is a different process, and should receive separate consideration. May I add that the views I recently presented under what is called concentration seem to make class instruction impossible. They lead clearly to the one conclusion, that every child should be taught as an individual, by himself, and this means that all class instruction is to be given up. Individual instruction can alone meet the conditions assumed to be essential by concentration, as explained. What does this involve?

There have been many scholars since the Flood,— scholars who have honored learning and widened its domain. How were they produced? Not by any one method, and certainly not by "concentration." These hosts of scholars cannot be accounted for on any such assumption, for they were produced under very unlike systems of elementary training. The history of school education shows that we are not shut up to a diet of pedagogic hash on the one hand, or one of baked beans on the other. There is clearly no one universal method or process in education by which alone a human soul is to be brought to power.

DR. NICHOLAS MURRAY BUTLER, *Columbia College, New York:* This is an interesting and exciting field of battle; it has not been a Bull Run, and it is manifestly not an Appomattox. But let us be fair, and let us discuss the question that is presented by this report. I shall spend no time in eulogizing this report. I do say that such a report, presented at this time, dealing with this specific topic in these words, is little less than a misrepresentation.

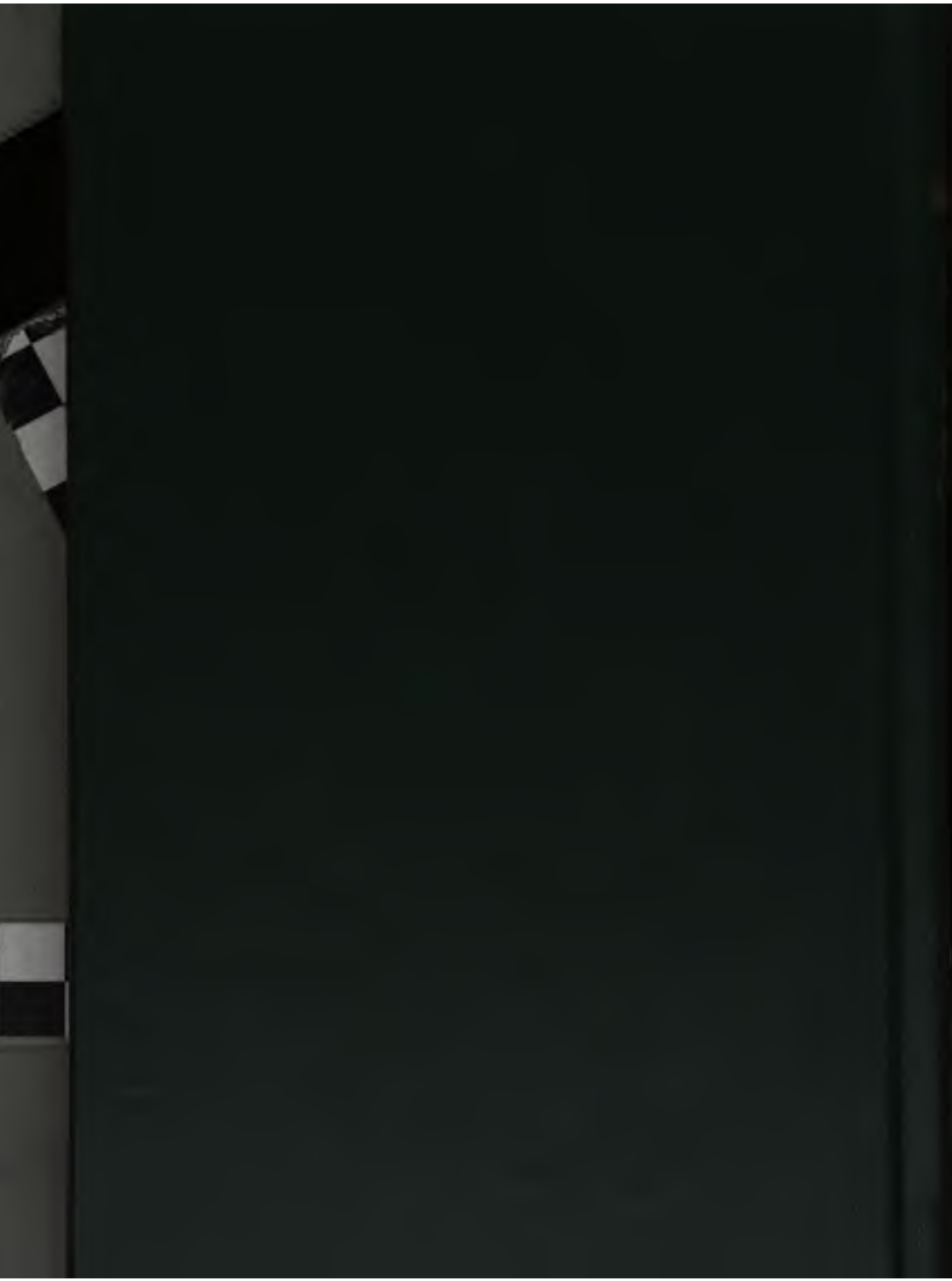
Such a document as this, presented at this particular time in the history of our educational development, and supposed to deal with the practical problem of the correlation of studies, is extremely unfortunate. This discussion has made it plain that there is among us a difference of opinion as to what the term "correlation of studies" means. This report interprets it to mean the correlation between the studies of the school curriculum and the intellectual environment of the pupil. Certainly that is not what the term is taken to mean in our current educational literature and in our current educational discussions. It has been claimed on this platform

that those who use the phrase "correlation of studies," in reference to the interdependence of school subjects one with another, are making a strained and improper use of the word. This criticism is not correct. The highest authority that we have, the "Century Dictionary," gives as a definition of correlation, "the act of bringing into orderly connection or reciprocal relation." It recites a passage from the great work of Grove, who first made this term familiar in English scientific literature, in illustration of the meaning of correlation. This is precisely the sense in which the word is used by Dr. McMurry and others, and it is precisely the sense in which we expect to find it used in this report. Therefore, I say I am disappointed, and grievously disappointed, that we have in these pages only a passing reference to the real problem of correlation or concentration as it is before American teachers at the present moment.

I can find no fault with the use of the word selected by the Committee, but I do complain that they have not treated the problem, whatever name they choose to give to it, that we asked them to solve. Instead of that, they have given us a splendid and learned discussion of educational values, an analysis of the history of the school curriculum, and an elaborate defence of the *status quo*. It is apparent to me, therefore, that this report faces backward and forward. I say this despite the fact that it suggests and argues for more than one important innovation in the curriculum.

For one hundred years, ever since the time of Pestalozzi, we have been trying to extract the curriculum from a philosophical discussion of this sort, but we have not succeeded in satisfying ourselves wholly. We have made great advance, and for that advance we in America are indebted more largely to Dr. Harris than to any other single person, living or dead. He has taught us to understand why certain specific branches of knowledge are selected for a place in the curriculum, and now we ask him to tell us how they are to be correlated, or coördinated, or concentrated, in practice, to meet the new demands that are made upon the school, and we get no answer in this report.

The curriculum that this report recommends to us, and the methods that it outlines, are arrived by an analysis made from the adult point of view. Are we, then, to understand that child study is to be given no hearing? Are we shut up to formal analysis as the sole method in evolving a practical school plan? The newer education answers this question directly in the negative. It is putting the child in the place of honor and asking him to tell us what his nature demands and in what order it demands it. Dr.

down a great educational doctrine and say that it is sufficient. The Sermon on the Mount is sufficient for nineteen centuries; but what we want is an application of Hegel, of Herbart, and of the wisdom of all other philosophers to the problems of the future. All hail the future!

DR. W. T. HARRIS: I wish to add one remark as to the meaning of correlation. I would call attention to its etymology, which makes it a bringing into relation of what is coördinate. I knew of the Herbartian idea of concentration of studies, but I was not familiar with the use of the word "correlation" in the same sense as concentration. I have given an example in discussing the methods of teaching geography of the application of the deeper doctrine of concentration. I have shown that we should start with the child and proceed in two directions, one towards the elements of difference in order to explain the obstacles which man has to overcome. On the other side, we should go towards the subjects of human industry, invention, and commerce, and learn the method by which man overcomes the "elements of difference." Geography for the child should begin in the centre and move outward towards these extremes, including at every step a human side and a natural side. This is not a philosophical study of correlation, Hegelian or otherwise, although it has been called so in this debate, but a scientific study of the educational value of the branches of the course of study. I began it in 1870. Now, in a scientific study one does not allow his feelings of attraction or repulsion to cloud his reason. He assumes an unprejudiced attitude towards the object that he studies. Child study, as it is pursued by Dr. Stanley Hall, is pursued with this true scientific spirit. But child study is not the only thing in education, nor can education be founded on child study alone. The child is here to be correlated with the world. The educator must study the world and study the child, and correlate the one to the other. That is to say, he must bring the child into a knowledge of the world and a mastery of its appliances. The report, of course, assumes the value of child study, and in all the numerous places where attention is called to the
(r of producing arrested development the results of child
are drawn upon; but, on the other hand, if you have a
1 le of the child, and do not have a knowledge of the significance of the branches of study and the way in which they unfold the world of reality, you cannot correlate the child with the